

Volume 6

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE WILLIAM H. ALSUP

ORACLE AMERICA, INC.,	)	
	)	
Plaintiff,	)	
	)	
VS.	)	No. C 10-3561 WHA
	)	
GOOGLE, INC.,	)	
	)	
Defendant.	)	
	)	San Francisco, California
		Monday, May 16, 2016

**TRANSCRIPT OF PROCEEDINGS**

**APPEARANCES:**

**For Plaintiff:** ORRICK, HERRINGTON & SUTCLIFFE LLP  
The Orrick Building  
405 Howard Street  
San Francisco, California 94105  
**BY:** **ANNETTE L. HURST, ESQUIRE**  
**GABRIEL M. RAMSEY, ESQUIRE**

(Appearances continued on next page)

Reported By: Katherine Powell Sullivan, CSR #5812, RMR, CRR  
Pamela A. Batalo, CSR No. 3593, RMR, FCRR  
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1 **APPEARANCES (CONTINUED) :**

2 **For Plaintiff:** ORRICK, HERRINGTON & SUTCLIFFE LLP

3 The Orrick Building

51 West 52nd Street

New York, New York 10019

4 BY: **PETER A. BICKS, ESQUIRE**

5 **LISA T. SIMPSON, ESQUIRE**

6 ORRICK, HERRINGTON & SUTCLIFFE LLP

7 777 South Figueroa Street, Suite 3200

Los Angeles, California 90017-5855

7 BY: **ALYSSA M. CARIDIS, ESQUIRE**

8 ORACLE

9 500 Oracle Parkway

Redwood City, California 94065

10 BY: **DORIAN ESTELLE DALEY, GENERAL COUNSEL**

11 **MATTHEW SARBORARIA, VICE PRESIDENT**

ASSOCIATE GENERAL COUNSEL

12 **For Defendant:** KEKER & VAN NEST

13 633 Battery Street

14 San Francisco, California 94111-1809

15 BY: **ROBERT A. VAN NEST, ESQUIRE**

16 **CHRISTA M. ANDERSON, ESQUIRE**

17 **MICHAEL S. KWUN, ESQUIRE**

18 **DANIEL PURCELL, ESQUIRE**

19 **MATTHIAS ANDREAS KAMBER, ESQUIRE**

20 **EUGENE MORRIS PAIGE, ESQUIRE**

21 KING & SPALDING LLP

1185 Avenue of the Americas

22 New York, New York 10036-4003

23 BY: **BRUCE W. BABER, ESQUIRE**

24 GOOGLE, INC.

25 1600 Amphitheatre Parkway

GOOGLE, INC.

BY: **RENNY HWANG, LITIGATION COUNSEL**

Also Present:

GEORGES SAAB

ORACLE CORPORATE REPRESENTATIVE

CATHERINE LACAVERA

GOOGLE CORPORATE REPRESENTATIVE

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7:27 a.m.

**P R O C E E D I N G S**

3       ---000---

4       (Proceedings were heard out of presence of the jury:)

5           **THE COURT:** Here is depo designation that I've looked  
6       at.

7       Angie, would you hand that to counsel.

8       Okay. What's the best way to use our time? What can I do  
9       to help the lawyers this morning?10          **MR. VAN NEST:** Your Honor, just a couple housekeeping  
11       things to alert the Court to what we expect to happen this  
12       morning. Of course we'll have Mr. Bornstein on the stand for  
13       redirect.14       The parties have agreed that some exhibits, a small  
15       number, can be admitted into evidence without a witness on both  
16       sides to eliminate witnesses or in some cases video plays. The  
17       exhibits will be used by other witnesses as the case goes  
18       along.19       But I intended to just read my list of five at the end of  
20       our case in chief later on this morning and just indicate that  
21       they are offered and there is no objection and ask that they be  
22       admitted. I won't do anything with them. I'll simply read the  
23       numbers out.24          **THE COURT:** Both sides okay with that?25          **MR. BICKS:** Yes. And so, Your Honor, just to round

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1 that out, before the case started, the parties had agreed on  
2 both sides that certain exhibits would be admitted. Your Honor  
3 then entered an order, but as a matter of housekeeping, at some  
4 point we should formally move those in, I guess, and both sides  
5 had some of those exhibits.

6           **THE COURT:** Fine. Okay. Good.

7           **MR. VAN NEST:** The only other thing that I have, we  
8 will -- we have a short stipulation from the Pretrial  
9 Conference Statement that we plan to read after Mr. Bornstein.  
10 It's Stipulated Fact 3. And we have a couple of requests for  
11 admission that we've indicated Oracle will read a little bit  
12 later on this morning before Mr. Barr testifies. And the  
13 parties submitted a stipulation regarding the testimony of  
14 Dr. Bloch that Your Honor has and we should deal with that  
15 before the Google case in chief closes.

16           **THE COURT:** Well, what I propose to do is I have an  
17 idea on that. I would like to read your proposed curative  
18 instruction on Dr. Bloch and then I thought this might be a  
19 good place to read something that I guess is not in good enough  
20 shape. I don't know what exactly my order proposes to read  
21 about the 62 classes and interfaces that are necessary to use  
22 the Java language. But I see from my order, I don't really  
23 have a good, succinct statement to give them.

24           Can you two give me a succinct statement that I could read  
25 to the jury? This is my order dated May 6th where I said that

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1 I was going to struck the jury that there is 62 classes and  
2 interfaces that are necessary to use the language, and then if  
3 Google wanted to try to prove more, then they could try to do  
4 that. But maybe the wording of my order is not in good enough  
5 form --

6           **MR. VAN NEST:** We'll take a look and try to propose  
7 something, Your Honor.

8           **THE COURT:** The Bloch thing would be an ideal moment  
9 to do that.

10          **MR. VAN NEST:** We don't have to do that first thing.  
11 We can do that after the break. We'll take a look at your  
12 order --

13          **THE COURT:** All right. You all take a look at -- all  
14 right.

15          **MR. VAN NEST:** Other than that, I think we expect to  
16 play some video depositions following Mr. Bornstein, and we'll  
17 have Dr.-- Professor Astrachan on the stand, and I think the  
18 Google case in chief will probably close later this morning.

19          **THE COURT:** That's great to hear. I'm going to do --  
20 you know, that statement that you all agreed on about the --  
21 that starts off, "the Java platform" and so forth? I'm going  
22 to read that again.

23          **MR. VAN NEST:** Okay.

24          **THE COURT:** This time I'm going to hand it out and let  
25 them read along, and I'll collect what they're reading from at

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1 the end of the read. Is that all right with you all?

2           **MR. VAN NEST:** Sure.

3           **MR. BICKS:** Yes.

4           **THE COURT:** I think that's the single most important  
5 thing that you all have agreed on in this case, and yet I can  
6 tell from the blank stares that they are having a hard time  
7 absorbing it. So we're going to give that to them again.

8           **MR. BICKS:** Can I raise a couple issues, Your Honor?

9           **THE COURT:** You may.

10          **MR. BICKS:** First of all, you indicated the parties  
11 were going to make on Friday mini summaries, short five-minute  
12 summaries. We didn't do that. I just wanted to let the Court  
13 know I'm prepared to do that.

14          **THE COURT:** How about this. After I read this  
15 statement again, each of you get five minutes to explain where  
16 we are. You can be a little argumentative. This is what we  
17 think we've proved, this is what we're going to prove, and this  
18 is how what you've heard so far fits into the overall case. I  
19 think will it be very useful.

20          **MR. BICKS:** I told Mr. Van Nest I was going to use  
21 some graphics. He said that was fine.

22          The other thing I wanted to ask the Court about is to let  
23 them know we had agreed that when it comes to witnesses, that  
24 the parties had agreed that they were not going to ask them how  
25 much money they had been paid, and we had agreed on both sides

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1 we weren't going to do that, but if the Court was going to  
2 examine on that, I wanted to make sure we all had the ground  
3 rules straight so if it was their witness up there and we  
4 didn't ask any question about how much money they got paid and  
5 then it came to our side and that issue came up --

6           **THE COURT:** Why don't you both bring out on direct  
7 that they have been compensated, that they have been paid.

8           **MR. VAN NEST:** That's fine, Your Honor.

9           **THE COURT:** Why do you want to keep from the jury how  
10 much money they have been paid? It would greatly affect the  
11 credibility, I think.

12          **MR. BICKS:** I think the amounts are comparable on both  
13 sides, and it's as much as anything -- you know, keep us moving  
14 forward and not getting on sideshows when both sides agreed --

15          **THE COURT:** You both want to keep that away from the  
16 jury?

17          **MR. BICKS:** I don't see that it's --

18          **MR. VAN NEST:** It's a little bit complicated in this  
19 case, too, Your Honor, because our experts were here for the  
20 first trial and this trial and their experts are all brand new  
21 so they're not really on even footing.

22          Dr. Leonard and Professor Astrachan were here and  
23 testified and worked up the first case, and they're back now  
24 again. And on the other side, all of the experts are brand  
25 new.

1 So I think it's less confusing to just leave it as it is.  
2 We can certainly bring out they are being compensated as an  
3 expert --

4 **THE COURT:** Is it true that somebody is being paid  
5 more than a thousand dollars an hour?

6 **MR. VAN NEST:** Excuse me?

7 **THE COURT:** Is it true that one of them is being paid  
8 more than a thousand dollars an hour?

9 **MR. VAN NEST:** One of there experts is, yes, according  
10 to his report.

11 **THE COURT:** That would just shock the jury.

12 **MR. BICKS:** Your Honor, the days of private practice,  
13 those are numbers that are --

14 **THE COURT:** Look, let's just do this. With misgivings  
15 if you each bring out from your own witness that they are being  
16 compensated for their work in the case, I guess I'll leave it  
17 at that.

18 **MR. VAN NEST:** Thank you, Your Honor.

19 **MR. BICKS:** Fair enough.

20 Just in terms of scheduling then, Your Honor, in terms of  
21 how you see things unfolding, as we're looking at the clock,  
22 it's likely that the case would -- the evidence and so forth  
23 would be over, if all goes according to plan, probably middle  
24 day Thursday and then Your Honor had indicated Friday was off.  
25 I just wanted -- if Your Honor had thoughts of how we were

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1 going to play this out.

2           **THE COURT:** My thought is that we would give you over  
3 the long weekend to prepare your closings.

4           **MR. BICKS:** Yes.

5           **THE COURT:** We would try hard to finish all the  
6 evidence by Thursday.

7           **MR. BICKS:** Yes.

8           **THE COURT:** We should be able to, but things come up  
9 and possibly we won't make it, but my guess is 75 percent that  
10 we will finish the evidence on Thursday, including your  
11 rebuttal case.

12          **MR. VAN NEST:** Will you need us in here on Friday,  
13 Your Honor?

14          **THE COURT:** No, not on Friday. But on Thursday we  
15 have to go over the instructions, which I'm working on and  
16 haven't quite got a draft for you yet, but I'm still seeing how  
17 the case unfolds and things that need to be addressed as a  
18 result of that.

19          **MR. BICKS:** Understood.

20          **THE COURT:** All right. Can we turn to -- I have -- I  
21 can cut through the -- have a proposal for you on this problem  
22 of the -- I'm going to let you argue it, if you want, but I  
23 have a proposal. It's close to what Oracle has suggested, but  
24 it seems to me that one way to go here would be to say to the  
25 jury that everyone agrees -- or if you don't agree, I could

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1 just tell them, but hopefully everyone agrees that the body of  
2 evidence on which they should, for this first phase, determine  
3 bad faith or good faith, which is close to the willfulness  
4 issue, but willfulness is later. But for this phase, we do  
5 have to decide or the jury has to consider good faith, bad  
6 faith. That for this phase, the evidentiary record is up to  
7 the date of the Complaint. That would pick up your Lindholm  
8 email, it would pick up all the evidence that you care about,  
9 and we would just say to the jury that that body of evidence  
10 governs for the fair use issue. And that it would  
11 automatically apply -- that's not the right word, but it will  
12 be deemed to apply to all of the versions of Android that are  
13 before the jury. So what do you think of that?

14           **MR. VAN NEST:** Would the Court make it clear, though,  
15 that the evidence following the filing of the Complaint is not  
16 to be considered on the question of willfulness or bad faith --

17           **THE COURT:** Well, for both willfulness and for the  
18 good faith/bad faith, I think that's the only practical way to  
19 deal with this. And then that would be close to your  
20 stipulation that would be -- it would not quite undo all the  
21 suggestions that Oracle has made, but part of that is your own  
22 fault for having agreed to that stipulation in the first place.

23           So I think the -- see, the filing of the Complaint is a  
24 very clear-cut, easy to explain, the jury would understand the  
25 evidentiary record stops as of the date of the Complaint, no

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1 one would question that. And I think that picks up on the  
2 evidence that you care about on your side. Right? So I'm  
3 looking now at Oracle.

4           **MR. VAN NEST:** Your Honor, Mr. Baber --

5           **THE COURT:** Take a moment to consider whether you  
6 would accept that as a way to go forward *modus vivendi*.

7           Just to be clear, I would tell them that the record is  
8 up to the date of the Complaint and that they should not  
9 consider evidence after that, but whatever their decision is as  
10 to fair use, up to the date of the filing of the Complaint  
11 would govern for all of the versions of Android that are in  
12 play in this phase.

13           Can I have your attention for one other thing. On the  
14 issue of the 2015 version of OpenJDK as Android, part of this  
15 would be that so far the door is not opened, but that if Oracle  
16 were to open the door in the way that I have said that they  
17 could on -- by claiming that it was not technically possible,  
18 whatever I said in the -- then that would still be a  
19 possibility for post -- post-Complaint evidence. But so far I  
20 would say no. That would also be part of this deal.

21           **MR. VAN NEST:** The later comment is fine, Your Honor.  
22 As we indicated in our brief, if things change, we'll ask for  
23 the Court's leave to deal with that. But on the first point,  
24 it does address -- your proposal does address the idea that  
25 this evidence post Complaint cannot be considered. It doesn't

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1 really address the question that got us here, which is the  
2 jurors wondering why we're here now and what happened before  
3 and the fact that there was a prior trial, and given what's  
4 been said both in the opening and in the cross-examinations of  
5 both Mr. Rubin and Mr. Schmidt, I do think it's important for  
6 the jury to understand what happened last time in some sort of  
7 a neutral away along the lines Your Honor proposed; in other  
8 words, that there was a prior trial, and at the conclusion of  
9 that trial, the trial court found that the APIs were not  
10 copyrightable and that decision was later reversed and that's  
11 why we're here. That would help them understand why evidence  
12 that they have already heard post Complaint cannot be  
13 considered on that issue.

14 Otherwise, it's sort of a mystery to them why we're  
15 cutting the evidence off and they've certainly heard  
16 cross-examination of two of our witnesses in this report and  
17 the statement in opening that we were going forth recklessly,  
18 intentionally making changes, especially if it's going to be  
19 deemed relevant to all of the subsequent versions of Android  
20 which the jury knows happened later than the filing of the  
21 Complaint because that was stated in the opening.

22 So, frankly, I have no problem with the first part of your  
23 proposal indicating that the evidence post-Complaint does not  
24 go to willfulness or bad faith, but I don't think it would be  
25 fair at this point, given what they've done, to leave it there.

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1 I think the jury should be told something about why we're here.

2           **THE COURT:** Ms. Simpson?

3           **MS. SIMPSON:** Your Honor, we find your proposal  
4 acceptable to Oracle. We think that would solve the problem.  
5 We do not agree that an instruction at this point is necessary  
6 or would be wise for the variety of reasons that we've set  
7 forth in our briefs. We think it would be prejudicial --

8           **THE COURT:** Well, can I -- I'm not saying I agree with  
9 your points in the brief, but I'm just trying to find a way  
10 forward here.

11          What if I were to say simply that -- make the statement  
12 that I've already proposed and then say you've heard reference  
13 to a prior trial. It is true that there was a prior trial. We  
14 are going to be hearing testimony from that prior trial read in  
15 now and then. Don't speculate about what happened in the prior  
16 trial and -- period. And not get into who won or lost.

17          And the reason that I would feel that you wouldn't need to  
18 get into that is the first part of what -- if we can agree that  
19 the body of evidence that counts is pre-Complaint, up to the  
20 date of the Complaint.

21          **MR. VAN NEST:** The problem, Your Honor, is they sort  
22 have already rung the bell, right? They asked that question of  
23 Schmidt and Rubin. I'm not sure it was asked of Bornstein, but  
24 they've already aggressively cross-examined both of them on the  
25 fact that they didn't do anything and now we're telling the

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1 jury well, that was all irrelevant.

2 You know, if they hadn't done that and all we had was an  
3 opening statement, we'd be in a lot better shape, but the  
4 opening statement went over this and then on our two key  
5 witnesses, they were examined, and I don't think at this point  
6 it's possible to unring that bell without some explanation of  
7 why we're taking that period out of play.

8 To me, that's going to seem very mysterious to jurors, and  
9 I think Your Honor can state the history in a neutral way and  
10 it doesn't have to be that Your Honor made the decision. The  
11 trial judge made the decision --

12       **THE COURT:** There is a way to do it. I could just say  
13 there was a decision on which -- there was a judicial decision  
14 not even necessarily in this case. There was a judicial  
15 decision on which Google was entitled to rely, but in 2014.  
16 An authoritative decision by the Court of Appeals held contrary  
17 and wouldn't have to mention the trial court or me -- I could  
18 get around that problem. That's not what I'm trying to do.

19       What I am trying to do is cure the -- see, this is kind of  
20 a mess that you lawyers have served up. Why did you agree to  
21 this stipulation in the first place, the stipulation where you  
22 wouldn't refer to the prior proceedings? So I think both of  
23 you are responsible for the mess we find ourselves in and I'm  
24 trying to figure out the fairest way to go forward.

25       **MR. VAN NEST:** I think your last proposal, Your Honor,

1 is fine. You don't have to say it was this Court. You could  
2 say a judicial decision that Google was entitled to rely on and  
3 that's why during that period any evidence you've heard about  
4 it is not within -- should not be within your consideration,  
5 something like that.

6 **THE COURT:** But even that wouldn't fully be accurate  
7 because once -- from May 2014 forward, you had nothing to rely  
8 on. So I -- even that wouldn't be -- it's only a partial  
9 solution.

10 **MR. VAN NEST:** But if they go there and they argue  
11 that, then we would ask to put OpenJDK in. I'm not so worried,  
12 but I am worried --

13 **THE COURT:** You can use OpenJDK. What you just can't  
14 do is use your version of it in 2015. You can still make the  
15 argument that OpenJDK could be adjusted, but what you can't do  
16 is say you actually did it.

17 **MR. VAN NEST:** My point is if you're worried about  
18 what happens to us if they argue that after the decision in  
19 2014 we still went forward, then we would be entitled, I think,  
20 to say well, no, we didn't. We changed our system. We went to  
21 OpenJDK which was licensed and now we are no longer publishing  
22 the old version. We've published the new version. That's what  
23 would be the anecdote for them now arguing that, okay, up to  
24 2014 they were fine, but then they made no changes. That's not  
25 true. We did make the change.

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1           **THE COURT:** Has any manufacturer actually adopted the  
2 new one?

3           **MR. VAN NEST:** I think they are in the process of  
4 doing it now. Absolutely.

5           **THE COURT:** Present participle tense. That's like *the*  
6 *check is in the mail*. We don't know whether it has happened or  
7 not.

8           **MR. VAN NEST:** But it's certainly been published and  
9 it's out there on the website, and the next version that any  
10 manufacturer adopts will have it and maybe they have. I'll  
11 have to check the state of the record.

12          I'm not sore worried about that. My concern is just  
13 telling them hey, put this out of your minds and you can't  
14 consider it's not fair when all the witnesses they could ask  
15 this of are gone, right? They've come and gone. Mr. Schmidt  
16 has come and gone and I told them you can't talk about OpenJDK  
17 or changes. You can't talk about the first trial. You can't  
18 talk about the copyrightability, neither Mr. Rubin or  
19 Mr. Schmidt. And then they ask well, you've continued going,  
20 and you've done nothing and so on. So I think there's got to  
21 be some correction made.

22          **MS. SIMPSON:** Your Honor, a couple of things. First  
23 of all, the Schmidt comment that's being referred to here  
24 specifically referenced 2010, so I don't agree that that has  
25 any relevance with respect to the problem that we're

1 discussing. It would fit right into the proposal that  
2 Your Honor has made.

3 With respect to the proposal -- the first proposal that  
4 you made in terms of advising the jury that there had been a  
5 prior trial, Oracle would be agreeable to that. Your latter  
6 proposal where you're talking about reliance, that is not  
7 acceptable from Oracle's perspective. We don't think that that  
8 solves the problem and it suffers from many of the concerns  
9 that we've raised in our briefing with respect to confusion and  
10 prejudice to Oracle.

11 We just don't think that there is any evidence in the  
12 record that there has been reliance, and we shouldn't be  
13 instructing the jury that they're entitled to rely on something  
14 when even their own discovery responses don't indicate that  
15 they have relied on it in any way. It didn't come up a single  
16 time in response to our discovery responses.

17 In addition, Your Honor, all this talk about Android N, I  
18 think it's a little misleading, that that was not in the works  
19 in response -- in direct response to the decision. It came  
20 much, much, much later, and we don't have a lot of discovery on  
21 it, but it was a very recent event.

22 **THE COURT:** Well, let's just focus on Android N, which  
23 is the 2015 version. If Google had put that out, say, 60 days  
24 earlier than it did and given you more notice, then there  
25 wouldn't even be any question that that could be referred to in

1 the case because it would tend to show that OpenJDK could have  
2 been used and that it was a viable alternative. That's for the  
3 jury to decide.

4 So the only reason that I have excluded that, with some  
5 reluctance, is that it wasn't fair to spring that on you at the  
6 very close of discovery.

7 **MS. SIMPSON:** Well, Your Honor, there's not a lot --

8 **THE COURT:** Wait, wait, wait. Let me finish my point.

9 So that is a different issue than this other problem of  
10 the prior lawsuit and the prior -- the interim holding that it  
11 was not copyrightable. That's a different problem, and I'm not  
12 suggesting that we roll that issue into the idea of a ruling by  
13 the Court on -- along the lines that I mentioned earlier,  
14 although I would stand by what I said earlier, which is that  
15 it's not going to be referenced before the jury unless the door  
16 to that gets opened.

17 But it's still perfectly okay for Google to say hey,  
18 OpenJDK could have been adjusted and we could have lived with  
19 that GPL Version 2 with the Classpath exception and just not  
20 refer to the fact that they in fact have done it.

21 I see that as a different problem than the problem of how  
22 do you deal with the interim order that was almost in effect  
23 for two years until the Federal Circuit reversed it about  
24 copyrightability and the problem of good faith and bad faith.  
25 I have proposed a way to deal with it and I think it's pretty

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1 close to the best I could do --

2           **MR. VAN NEST:** Your Honor, I continue to think that  
3 rather than tell the jury what they can or can't do or what  
4 they can or can't consider at this point, the very simple  
5 procedural statement made as neutral as you can is better than  
6 that, because then you're simply providing them facts and  
7 context rather than telling them thou shalt not consider this  
8 or thou shalt not consider that. I think that's going to be  
9 very confusing where we are now.

10           I think of the very simple statement that you laid out, if  
11 Oracle has got problems with the language, okay, but the very  
12 simple statement that will explain what happened and just put  
13 the facts in is far better than trying to manipulate what they  
14 can or cannot consider at this point in the case when our case  
15 is just about to close.

16           **MS. SIMPSON:** Your Honor, we disagree --

17           **MR. VAN NEST:** Excuse me, counsel.

18           I think a neutral statement, very similar to the one you  
19 gave -- because we all know that, A, the law was unsettled; B,  
20 Google prevailed in the first trial, and then that was  
21 reversed.

22           Now, you don't have to say Google prevailed, but certainly  
23 the issue is when you finished that trial and the API  
24 declarations were found not copyrightable, you know, there's no  
25 judgment against Google at that point.

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1           So it just seems to me that -- I'm happy to work with  
2 counsel and the Court on something as neutral as possible, but  
3 a simple statement of what happened I think would be better  
4 than at this point telling them what they can or cannot do.

5           **THE COURT:** All right, Ms. Simpson.

6           **MS. SIMPSON:** Your Honor, it's not confusing to the  
7 jury to tell them what they can and cannot consider. It  
8 happens all the time, and we're about to do it with respect to  
9 the testimony was elicited from Mr. Bloch. So that's not an  
10 unusual occurrence, to tell the jury what they can and cannot  
11 consider. So I think that is a red herring.

12          We don't agree that we should be injecting into the jury's  
13 considerations history with respect to the case that we can't  
14 phrase in a way that is not prejudicial to the parties. And so  
15 far we haven't been able to come up with that language other  
16 than what Your Honor proposed in his first proposal, which was  
17 we simply say that there was a trial and explain that they're,  
18 you know, hearing testimony from that prior trial. That would  
19 be fine.

20          But when we get beyond that, we're talking about injecting  
21 into the jury deliberation things that happened in the prior  
22 trial that are going to infect what they're doing in this  
23 trial.

24           **THE COURT:** All right. I don't have an answer for  
25 you. I wish you good lawyers could -- see, you worked out this

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1 stipulation that you would not refer to the prior proceedings,  
2 and this is really Google's fault, in a way, for having agreed  
3 to that. Now you want to go back on it and I don't blame you  
4 for wanting to go back on it, but it's not so clear-cut, what  
5 should be done here.

6 All right. I'm going to bring the jury in and we're going  
7 to get started.

8 **MS. HURST:** Your Honor, we have one more housekeeping  
9 matter related to this witness, who is still on the stand.

10 **THE COURT:** Mr. Bloch?

11 **MS. HURST:** Mr. Bornstein.

12 **THE COURT:** I'm sorry. Mr. Bornstein, yes.

13 **MS. HURST:** We've agreed that a document I referred to  
14 on cross-examination may be admitted without further  
15 examination of the witness, and that the demonstrative that he  
16 used on direct shall be marked for purposes of identification  
17 on the record.

18 **THE COURT:** The one on the butcher block --

19 **MS. HURST:** The one on the easel, Your Honor.

20 **THE COURT:** Is that okay?

21 **MS. ANDERSON:** The exhibit I believe counsel is  
22 releasing to is Exhibit 26. Is that correct?

23 **MS. HURST:** Correct.

24 **THE COURT:** 26. The thing he's got on the butcher  
25 block? Is that it?

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1           **MS. HURST:** 26 is the one on cross, Your Honor. Trial  
2 Exhibit 26 is --

3           **THE COURT:** 26 is received in evidence; is that what  
4 you're saying?

5           **MS. HURST:** Yes.

6           **MS. ANDERSON:** For Oracle's examination. Oracle is  
7 offering in evidence 26. We do not object.

8           And then for the demonstrative exhibit, which is the  
9 drawing Mr. Bornstein, did we would like to mark that for  
10 identification 7792.

11           **THE COURT:** Are we on cross yet?

12           **MS. HURST:** We finished the cross, Your Honor.

13           **THE COURT:** Where are we now?

14           **MS. ANDERSON:** Redirect, Your Honor.

15           **MS. HURST:** So it's Defendant's Demonstrative 7792 is  
16 the drawing made on Mr. Bornstein's and Trial Exhibit 26 is  
17 stipulated to be admitted as part of the cross.

18           **THE COURT:** Got it. 26 is in. 7792 is demonstrable  
19 only.

20 (Trial Exhibit 26 received in evidence)

21 (Trial Exhibit 7792 marked for identification)

22           **MS. ANDERSON:** Thank you, Your Honor.

23           **THE COURT:** Let's bring our jury in.

24           Are you both prepared with your five minute statements?

25           **MR. BICKS:** Yes, Your Honor.

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1           **MR. VAN NEST:** Are we going to do that first thing?

2           **THE COURT:** Yes. We are going to do it first thing.

3 I'm going to the -- it will be very close to first thing.

4 (Proceedings were heard in the presence of the jury:)

5           **THE COURT:** I hope you all had a great weekend. Did  
6 you have a good weekend? What a beautiful weekend, wasn't it?  
7 This is why people move to California, because of last weekend.

8 So here's -- we are going to take care of a couple of  
9 things, and the first thing I want to do is to hand out to you  
10 something, and I'm going to collect it right back up as soon as  
11 we've read it.

12          Remember that statement that I read to you last week  
13 twice? I'm going to read it to you again, but this time I'm  
14 going to let you follow along in writing, but then I'm going to  
15 collect it back up. I can't let you keep it really because --  
16 maybe I could. I told the lawyers I would collect it back up.

17          Angie, hand out the statement.

18          Don't make any notes on it. Just read along as I read it  
19 out loud.

20          I'm doing this because I felt like twice was probably not  
21 enough, given that you all raised your hand, almost all of you.  
22 You wanted to hear it again. Okay.

23          So what we're going to do is I'm going to read this to  
24 you, and then we'll collect it back up. This is an agreed-on  
25 statement by the lawyers. It counts as evidence. This is

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1 evidence that you may consider. It's like a stipulation. This  
2 time I'm just going to read it once since you are able to  
3 follow along.

4 "The Java platform is a software application platform that  
5 is used to write and to run programs in the Java programming  
6 language. The Java programming language is free and available  
7 to use.

8 "The Java platform includes, among other things, the Java  
9 virtual machine and the Java API packages.

10 "API stands for *application programming interface*. What  
11 is at issue in this case are the Java API packages, which are  
12 sets of pre-written computer programs used to perform common  
13 computer functions without a programmer needing to write code  
14 from scratch. These pre-written computer programs assist  
15 developers in writing applications.

16 "These pre-written programs are organized into packages,  
17 classes, and methods. An API package is a collection of  
18 classes. Each class contains methods and other elements.

19 "The packages, classes, and methods are defined by a  
20 declaring code. The declaring code is the line or lines of  
21 source code that introduce, name, and specify the package class  
22 or method.

23 "The declaring code allows programmers to understand and  
24 make use of the pre-written programs in the API packages to  
25 write their own programs. The declaring code for the packages,

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1       classes, and methods reflects the structure, sequence, and  
2       organization or SSO for the Java API packages.

3            "The SSO specifies the relationships between and among the  
4       elements of the Java API packages and also organizes the  
5       classes, methods, and other elements in the package.

6            "Each individual method performs a specific function. The  
7       declaring code for a method is sometimes referred to as the  
8       method declaration, header, or signature. The declaring code  
9       for a method tells the programmer the information the method  
10      needs, the inputs to perform the desired function. Each method  
11      also contains implementing code.

12            "The implementing code provides step-by-step instructions  
13      that tell the computer how to perform the function specified by  
14      the declaring code.

15            "The declaring code and the SSO of the 37 Java API  
16      packages at issue are protected by copyrights owned by Oracle.  
17      The copyright protection does not extend to the idea of  
18      organizing functions into packages, classes, and methods, but  
19      the copyright protection does cover the SSO as expressed in the  
20      37 Java API packages."

21            All right. I'm going to let you read that to yourself for  
22      just a few seconds in case there's something you want to go  
23      back over and then I'm going to collect these up from you.  
24      Don't make any notes on it now, please. Okay.

25            Angie, would you collect up these handouts.

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1       So what we are going to do now is sometimes done in a case  
2 like this. I am going to give five minutes per side to let  
3 each lawyer stand up and tell you what they -- where we are and  
4 what they think has been proven and will be proven, and they  
5 can be a little argumentative if they want, and to kind of remind  
6 you of what happened last week and give you a heads-up as to  
7 where we're going. It's only five minutes per side, but this  
8 will be a way to, as we're about halfway through this part of  
9 the case -- for you to get a summary and maybe refresh your  
10 memory as to some things that occurred last week.

11       Does one of you want to go first.

12           **MR. BICKS:** Yes, Your Honor.

13           **MR. VAN NEST:** I would like to, Your Honor, since we  
14 have the burden.

15           **THE COURT:** I'm going to let Google go first because  
16 Google has the burden of proof on this phase of the case.  
17 Because they have the burden of proof, I'm going to let them  
18 speak first.

19       You have five minutes.

20           **MR. VAN NEST:** Thank you, Your Honor.

21       Good morning everyone. Thank you very much. You've been  
22 a very, very attentive jury, following the evidence, and we all  
23 very much appreciate that.

24       I will have a bigger chance in closing argument to  
25 actually show you the evidence, so now I'm just going to talk a

1 little bit about what you've seen so far.

2 And the first maybe most important thing you've seen is  
3 from the very top of both of these companies, it was clear to  
4 everybody that the Java API declarations were treated as Sun --  
5 by Sun as open and free. Open and free, given away with the  
6 free Java language so that developers could use the language  
7 more effectively and there would be more widespread use.

8 Mr. Schwartz, whom you heard from last week, was the Chief  
9 Executive Officer at Sun at the relevant time, and he came in  
10 and under no uncertain terms and said we gave the API  
11 declarations away for free and people competed on  
12 implementations.

13 From my file cabinet, which is resting downstairs, these  
14 are the declarations. This label is the method declaration.  
15 What Mr. Schwartz said was those are given away free, promoted  
16 with the language. Mr. Schwartz said it; Mr. Schmidt said it.  
17 Mr. Schmidt, although he is now at Google, was the Chief  
18 Technology Officer at Sun, back when Java was developed and  
19 launched. And what they both said was as long as you're just  
20 using the labeling and you write your own implementing code,  
21 that's what we understand is okay. You can use the label. And  
22 what Mr. Schwartz said was it's like a menu. It's like a menu.  
23 Everybody is going to work off the same menu, but the food you  
24 prepare must be done originally by you.

25 So everybody was in alignment -- Mr. Schwartz, Mr. Schmidt

1 and Mr. Bloch -- who wrote a lot of the API, said we wrote them  
2 to give them away so developers could use them.

3 The other key point is that Sun was fully aware after the  
4 negotiations ended that Google would be using the API  
5 declarations in Android. Mr. Schwartz said, "I was aware of  
6 it." Mr. Schmidt said, "I made them aware of it," and when it  
7 was announced in November of 2007, Sun didn't have a complaint  
8 because it was consistent with what Sun was doing as a business  
9 practice. It was consistent with giving away the declarations  
10 and having people do their own implementing code.

11 So you saw Mr. Schwartz's blog. That's just one part of  
12 the evidence. His blog said, "Welcome Android to the Java  
13 community." That shows you, proves essentially that Sun  
14 recognized this as consistent with its business practices and  
15 okay to do it. As Mr. Schwartz said, I never told Google what  
16 they were doing was wrong in any way.

17 But it's not just a blog post. For years thereafter, in  
18 '07, '08, '09, Mr. Schmidt and Mr. Schwartz exchanged emails,  
19 calls, and meetings; Mr. Rubin and Mr. Gupta. So Schwartz is  
20 Sun; Schmidt is Google; rubin is Google. He's the head of  
21 Android. He's exchanging with Mr. Gupta at Sun. And  
22 throughout those emails, what is being expressed by Sun is we'd  
23 like to participate, we'd like to help, we'd like to support.  
24 Can we help support your announcement? Can we build our own  
25 product and put it on top? Can we work with you as part of

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1   Android? That's the opposite of saying you're not allowed to  
2   do this. They recognized it was fair at the time. They never  
3   objected. That went on for years. I don't want you to have  
4   the impression it's just a single blog post. It's email after  
5   email and calls and meetings.

6           Mr. Schmidt met with Mr. Schwartz. What's the subject?  
7   Not you can't use these. The subject is I want to know if I,  
8   Sun, can build a product on top. And then we saw the video  
9   where Sun was bragging at JavaOne we're going to put something  
10   on top of Android. They clearly understood that what Google  
11   was doing was fair and consistent with their business  
12   practices.

13          The third point that I want to touch on is you now know,  
14   not from snippets of email -- by the way, this is not a contest  
15   of email soundbites or little snippets of email. You have now  
16   heard from the key people at both companies, Mr. Schmidt and  
17   Mr. Rubin from Google and Mr. Schwartz from Sun. The  
18   negotiations they had back in that '05, '06 period were not  
19   about a license to APIs or the language. Everybody assumed  
20   those were free to use. Those negotiations were for a joint  
21   development partnership where Sun would be contributing  
22   proprietary technology: It's virtual machine, the implementing  
23   code that Sun wrote. Obviously this is Google's independent  
24   implementation, but Sun had their own version.

25          Google was hoping that Sun would contribute its -- its

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1       implementing code and make this whole process of building  
2       Android faster. So, yes, it's true, the emails you saw that  
3       say we need a license, that was absolutely true in '05 and '06  
4       because what Google wanted was implementing code, the virtual  
5       machine, all of their proprietary technology, and the coffee  
6       cup logo.

7           That didn't happen. They didn't reach a deal. They were  
8       negotiating in the 30 to 50 million range as you saw from  
9       Mr. Schwartz and Mr. Schmidt, and they couldn't agree on  
10      control.

11          And when that happened, when that happened, Google did  
12       exactly the right thing. Google went forward, went out to the  
13       market, got open source implementing code to put in Android,  
14       didn't use any Sun technology, used the declaring lines, the  
15       declarations, the method headers, which everybody assumed were  
16       open and free. That's what Mr. Schwartz said, that's what  
17       Mr. Bloch said, that's what Mr. Schmidt said, that's what  
18       Mr. Rubin said, and as Mr. Bornstein said it best, nobody owns  
19       the API declarations. Nobody owns them. That's what these API  
20       developers and companies have assumed for years, all along  
21       until this lawsuit was filed. That's what the operating  
22       working assumption was.

23           **THE COURT:** Okay. You're out of time.

24           **MR. VAN NEST:** Can I have one minute, Your Honor?

25           **THE COURT:** I will give you half a minute.

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1           **MR. VAN NEST:** Half a minute.

2           This morning you're going to be hearing more about the  
3 transformative nature of Android. You heard some of that from  
4 Mr. Rubin and Mr. Bornstein. This morning we're going to show  
5 some video from the Sun people and the Oracle people that  
6 failed to build a smartphone. They couldn't do it using the  
7 same APIs. And we are going to hear from a Duke University  
8 Professor Astrachan, who will also talk about the  
9 transformative nature of the Android platform.

10          Thanks very much for your attention, ladies and gentlemen.

11          **THE COURT:** Thank you.

12          **MR. VAN NEST:** Thank you, Your Honor.

13          **THE COURT:** Thank you.

14          Mr. Bicks, you will get seven minutes, too.

15          **MR. BICKS:** Angie, could we put the screen on, please.

16          So good morning, ladies and gentlemen. I stood before you  
17 in the opening statement and I said the case was about the  
18 evidence. And Judge Alsup pointed out that what lawyers say in  
19 opening isn't evidence. What I would like to report to you  
20 today is what the evidence is going to show -- has shown so  
21 far. Not lawyer argument.

22          The first thing I want to touch on is where I ended my  
23 opening. I showed language from Google's own documents and I  
24 said to you in my opening these were their words and not my  
25 words. Their words at the time. So what's happened?

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1       Every statement that I made to you in opening has now been  
2 backed up by a trial exhibit. Documents from their files.

3       Those are the trial exhibits that were admitted in this case  
4 with their language.

5       APIs are copyrighted. They knew it. The alternatives all  
6 sucked. Make enemies along the way. Don't demonstrate the Sun  
7 employees were lawyers. Those are all the admitted documents  
8 in evidence that backs up and supports what I said in my  
9 opening statement.

10       Now, this is a case about fair use. These are the  
11 factors. You didn't hear Google's counsel talk very much about  
12 these factors. These are the questions that are before you  
13 that Judge Alsup read in his instructions, and you'll hear more  
14 about.

15       Four of them to the left and then the first one breaks  
16 down into separate questions. But it's very important that we  
17 look at the evidence in -- when focusing on these factors.

18       So what I want to review now is what has the evidence  
19 shown on these factors?

20       Good faith in factor 1, that's all the evidence that I  
21 just showed to you. Knowledge about copyright, knowledge that  
22 the alternatives, that they had none, and that they had to take  
23 that property without permission.

24       So let's go through some of this evidence. They have the  
25 burden of proof. I pointed that out in the opening. That's

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1 why they have to go first. We don't even have to put on  
2 evidence. But through their witnesses, we put on evidence.  
3 And now I want to have you see what exactly happened.

4 Factor 1, is this commercial? It's undisputed it's  
5 commercial. And then the question is how commercial is it?  
6 That goes against fair use.

7 So what did we prove in their case? Mr. Schmidt, Android,  
8 more searches, more ads, more lucrative, hugely profitable. No  
9 question on the extent of commerciality here. It is hugely  
10 profitable.

11 When it comes to Mr. Schwartz, his blog, I told you in the  
12 opening to watch out for what is a party line when somebody  
13 finds themselves in a pickle and what the actual truth was when  
14 you look at emails that were being sent internally so you can  
15 see what somebody was really saying. So I got him on the stand  
16 and I wrote on a board what he said, that he was gritting his  
17 teeth. They was Google. That they were taking without paying.  
18 Taking without paying. That's what he said. Scroogel, he  
19 called them. Not my words; his words. Playing fast and loose  
20 with licensing terms. Immune from the copyright laws.

21 And then Mr. Rubin, "I wanted to win. Get to the market  
22 in the shortest time possible. Direct revenue impact. Search  
23 plus Android is huge." That's on the first factor. That was  
24 their burden of proof to show you that this is not commercial  
25 and that there is not a lot of money involved. We proved in

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1       their case the exact opposite.

2               Transformative, critical question. Did they take our  
3       client's property? Did Google take it and use it for a  
4       different purpose? I told you in opening the evidence was  
5       going to be it was not a different purpose. Those design of  
6       those packages do the same thing in their mobile phones that  
7       they do in Oracle's property. And this was testimony from  
8       their executive, Mr. Rubin, same industry, similar products.

9       This is what he said. Competitive. They were competitors.

10      Same industry, similar products.

11               Ladies and gentlemen, do not be fooled by this feature  
12       phone smartphone distinction. He said at Danger they built one  
13       of the first smartphones, one of the first with Java SE in it,  
14       with Oracle's API packages, in a smartphone. The first one.  
15       We were in that smartphone. That's what the evidence shows.

16               This whole argument that Sun and Oracle failed to build a  
17       phone, we're not in the business of building phones. We  
18       license technology. That's the business model. Licensing  
19       technology. That's what the evidence will show.

20               Now, on creativity, the judge has indicated another factor  
21       in the fair use. That there is already a level of creativity  
22       found here because there was a copyright issue. The question  
23       is how creative is this? Critical evidence that came in.  
24       Again, not my words, the evidence in the case. What was it?

25               Dr. Bloch, he wrote this: "API design is an art, not a

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1 science. Strive for beauty." Those were his words before  
2 litigation. If you can imagine evidence that shows creativity,  
3 I can't imagine anything more forceful from the man who wrote  
4 some of these APIs. Art and beauty. That is what creativity  
5 is all about.

6 Dr. Bloch again, "creative writing and expression." This  
7 is the words from the Court. "Expression." He used that word  
8 on cross-examination. "How best to express." And he talks  
9 about how difficult this can be. He used the words that match  
10 exactly what the Court said about expression.

11 Factor 3, we're going to hear more about that, but this  
12 was their burden to show you that what they took wasn't really  
13 a lot, that they left a lot behind, but they haven't met that  
14 burden yet. This is their burden to show you this and they  
15 haven't provided evidence at this point.

16           **THE COURT:** You've hit the seven-minute mark. Take a  
17 few more seconds and wind up.

18           **MR. BICKS:** Factor four, the final factor, market  
19 harm. Here is the evidence on market harm.

20           Mr. Schmidt, "taking someone's property when it's  
21 unauthorized causes harm." That's what he admitted on  
22 cross-examination.

23           Mr. Schwartz, "frustrated because of a new competitor.  
24 Concerned about fracturing because of Android."

25           And then Mr. Rubin, "revenues of over a hundred million

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1 dollars from Sun were at risk of being submarined."

2 Again, these were their words, not mine.

3 And then "same industry, same products. Head-to-head  
4 competitors." And then finally, "open source equals open and  
5 free." It doesn't. Every one of their witnesses say that  
6 that JDK open and free license that they keep saying free,  
7 free, free, it wouldn't have worked for them. They all said  
8 that, every witness. Mr. Rubin. Mr. Bloch, verboten. He kind  
9 of fudged on the stand. He didn't want to say verboten until  
10 Ms. Hurst showed him his testimony. And then finally Dan  
11 Bornstein, "it was incompatible with Android's needs."

12 The evidence has completely undercut that this OpenJDK  
13 license was a viable alternative back then.

14 That's my summary of the evidence. And it is evidence.  
15 We have not presented our case yet and we look forward to that  
16 and we'll start today. Thank you.

17 **THE COURT:** All right. Thank you. Let's -- we are  
18 going to now -- yes?

19 **MS. ANDERSON:** Sorry, Your Honor.

20 **THE COURT:** Are you ready to bring back Mr. Bornstein?

21 **MS. ANDERSON:** We are, yes.

22 **THE COURT:** Remind the jury, how far did we get with  
23 him last time?

24 **MS. ANDERSON:** Your Honor, we completed Oracle's  
25 cross-examination and now we are returning to redirect

1 examination by Google's counsel.

2           **THE COURT:** Let's bring Mr. Bornstein in. While the  
3 witness is coming in, let me give the jury a heads-up. We all  
4 think that we will finish the evidence part of this phase of  
5 the case by Thursday. That's just an estimate. And that we  
6 will argue the case the following Monday to you. Remember,  
7 this coming Friday you have off. So we're expecting that the  
8 evidence will be done this week. So four days of evidence this  
9 week. All right.

10           So Mr. Bornstein, welcome back. You're still under oath.  
11 Ms. Anderson has some questions for you.

12           DANIEL BORNSTEIN, DEFENDANT WITNESS, PREVIOUSLY SWORN  
13           **BY MS. ANDERSON:**

14           **Q.** Good morning, Mr. Bornstein. Welcome back.

15           **A.** Thank you. Good morning.

16           **Q.** Thank you.

17           I just wanted to follow up with a few questions on some of  
18 the testimony you gave on Friday. Okay?

19           **A.** Okay.

20           **Q.** First, let's turn our attention to some testimony that you  
21 gave about Sun's offering an open source implementation called  
22 OpenJDK and your testimony about why you thought Google didn't  
23 want to use the implementing source code from OpenJDK. Do you  
24 generally recall --

25           **A.** I do, yes.

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1   **Q.** -- that area of testimony?

2   **A.** Yes.

3   **Q.** With that in mind, let me ask you a few questions.

4                 First of all, when you were working on the Android team at  
5 Google, were you the person in charge of making legal licensing  
6 decisions for Google on Android?

7   **A.** I was not.

8   **Q.** What was your area of focus on the Android team?

9   **A.** I was the technical lead for the virtual machine and core  
10 libraries and that involved writing code and overseeing other  
11 people who were writing code in various ways.

12   **Q.** Did you hold yourself out as a legal expert on the Android  
13 team?

14   **A.** I did not.

15   **Q.** Do you recall generally Oracle's counsel reading to you  
16 some statements you thought you might have made at the time  
17 about the ability of Android to use code licensed with a  
18 Classpath exception?

19   **A.** Yeah. I remember.

20   **Q.** What I would like you to do, please, is take out Exhibit  
21 9139 that's in a folder there before you.

22   **A.** 9139?

23   **Q.** This is not one of the documents Oracle's counsel showed  
24 you on Friday, but what I'd like you to do is take a look at  
25 this document for some statements, and let me know if some of

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1 those statements were those read to you by Oracle's counsel  
2 during exam on Friday.

3 In particular, please just take a look at the statement  
4 that starts with the word "basically" about one-third of the  
5 way down the page and just let me know if this was one of the  
6 statements read to you on Friday by Oracle's counsel.

7 **A.** That looks familiar, yes.

8 **Q.** Okay. Did Oracle's counsel quote to you all the  
9 statements you made in this Exhibit 9139?

10 **A.** No, they did not.

11 **Q.** Are there other statements in this email that relate in  
12 any way to your beliefs during the time you were with Android  
13 about the possible use of Classpath licensed code in Android?

14 **A.** Yes.

15                   **MS. ANDERSON:** Your Honor, we offer in evidence  
16 Exhibit 9139.

17                   **MS. HURST:** No objection.

18                   **THE COURT:** 9139?

19                   **MS. ANDERSON:** That's correct, Your Honor.

20                   **THE COURT:** All right. Received in evidence.

21 (Trial Exhibit 9139 received in evidence)

22 **BY MS. ANDERSON:**

23 **Q.** Mr. Bornstein, would you tell the jury what is this  
24 document?

25 **A.** This is an email from me to a gentleman named Ihab, who

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1 was not on the Android team but did do some Java-related stuff.

2 **Q.** And at the top of this email, we see the subject line. Do  
3 you see that?

4 **A.** Yes.

5 **Q.** Would you read that to the jury.

6 **A.** It says "Re Classpath exception stuff."

7 **Q.** Did you provide any caveats in connection with your  
8 statements in this email?

9 **A.** Yes. I provided a huge caveat.

10 **Q.** In particular, would you please read to the jury the first  
11 line of your email?

12 **A.** Yes. This was in all caps. "Huge caveat, I am not a  
13 lawyer."

14 **Q.** All right. And then drawing your attention down about a  
15 little more than halfway down the page in the paragraph that  
16 starts "one analysis seems to be. " Do you see that paragraph?

17 **A.** I do.

18 **Q.** Do you see some language about the middle of this  
19 paragraph which talks about whether or not you're a lawyer?

20 **A.** Yes.

21 **Q.** All right. Would you please read that phrase to the jury.

22 **A.** The phase -- the phase is "I am not a lawyer."

23 **Q.** All right. And continue to the end of the sentence,  
24 please.

25 **A.** Sorry. "I'm not a lawyer and I am not interested in

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1 claiming that any legal analysis I do is sound."

2 **Q.** And then drawing your attention, if you would, down to the  
3 next paragraph that starts with "GNU." Do you see that?

4 **A.** Uh-huh.

5 **Q.** Would you please read this to the jury.

6 **A.** "GNU plus Classpath very well may turn out not to be a  
7 real problem, but my take is, quote, 'why tempt faith',  
8 unquote, especially in that we are going to be able to deliver  
9 a more favorably licensed version within a reasonable time  
10 frame."

11 **Q.** Thank you.

12 To what extent, if at all, did the statement you just read  
13 accurately express your beliefs at the time?

14 **A.** I think it was a very accurate statement of my belief at  
15 the time.

16 **Q.** And what is the date on this email?

17 **A.** The date is March 30, 2007.

18 **Q.** Okay. Was this statement in this email written before or  
19 after Sun had even offered its open source software?

20 **A.** Before.

21 **Q.** All right. So you can go ahead and set that down. Thank  
22 you, Mr. Bornstein.

23 I would also like to turn your attention now to some other  
24 testimony you gave generally about your explanation of the  
25 Android platform, and you had explained your view that the

1      Android platform was a cohesive hole with pieces of the  
2      platform generally having to work together. Do you remember  
3      that?

4      **A.** I do.

5      **Q.** All right. On cross-examination by Oracle's counsel, you  
6      were asked if the levels in the Android platform stack above  
7      the core libraries depend on the core libraries to work. Do  
8      you generally recall that testimony?

9      **A.** I do.

10     **Q.** Are the core libraries in Android the only part of the  
11    Android code that is depended upon by other parts of the  
12    Android platform?

13     **A.** No.

14     **Q.** Would you please explain.

15     **A.** Yes. I could refer to the diagram, if you wanted to. I  
16    don't know --

17     **Q.** Sure. If we could have Exhibit 43.1. Please just tell us  
18    at a high level what you mean.

19     **A.** So what I mean is that -- of course this is not -- you  
20    know, this is only a sketch, right, but even so, you can sort  
21    of see these layers, and the layers below serve as a foundation  
22    in general for the layers above.

23           So if you look at like, say, the applications at the top,  
24    the applications depend on the application framework and the  
25    application framework depends on everything below that, and

1 that's -- so you can see all those green libraries to the left,  
2 you can see the Android Runtime box to the right. The stuff  
3 above depends on all of that and then all of that stuff in turn  
4 depends on the Linux kernel.

5 **Q.** When you say all of that stuff in you turn depends on the  
6 Linux kernel, what are you referring to when you say "all of  
7 that stuff?"

8 **A.** Everything that's represented above the red box at the  
9 bottom.

10 **Q.** Just in summary, are you saying that everything above the  
11 Linux kernel depends on the Linux kernel?

12 **A.** That's right.

13 **Q.** Thank you.

14 Now if you would, please, take out Exhibit 415, which is  
15 another document that Oracle's counsel asked you about.

16 **A.** Okay.

17 **Q.** You were asked some questions about the paragraph that  
18 starts with the words "we talked about using GNU Classpath."  
19 Do you see that?

20 **A.** I do.

21 **Q.** If we could have Exhibit 415 up, please, Mr. Dahm. Thank  
22 you very much. If you could highlight for the jury, please,  
23 Mr. Dahm the paragraph starting with "We talked about." Thank  
24 you.

25 Drawing your attention to the first couple sentences of

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1       this paragraph, do you recall generally giving testimony about  
2       those first two sentences?

3       **A.**     Just a second. Yes.

4       **Q.**     Okay. So with regard to the statement in this email that  
5       you made about, quote, "we talked about using GNU Classpath,  
6       but we ended up deciding against it," do you see that?

7       **A.**     I do.

8       **Q.**     To make sure there's no confusion here, would you please  
9       tell the jury to what extent, if at all, the discussion that  
10      we've highlighted here has anything to do with Google's  
11      decision to create its own independent implementation of Java  
12      APIs in Google.

13      **A.**     I'm sorry. Say that again.

14      **Q.**     You testified on Friday generally about the fact that  
15      Google made a decision to create its own independent  
16      implementation of Java APIs in Google?

17      **A.**     Uh-huh.

18      **Q.**     This paragraph we're reading from that you quoted -- that  
19      we've quoted from talks about using GNU Classpath.

20      **A.**     Right.

21      **Q.**     And in this particular couple sentences, you talk about a  
22      potential for trouble; right?

23      **A.**     That's right.

24      **Q.**     To what extent, if at all, does this discussion have to do  
25      with any concerns about potential for trouble from making an

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1 independent implementation of Java APIs in Android?

2 **A.** Nothing, if I understood you correctly. GNU Classpath was  
3 an independent implementation of Java APIs. We were discussing  
4 do we -- I think what I'm saying here is we talked about using  
5 GNU Classpath. That was one independent implementation and --  
6 versus another one. So in either -- either side of the  
7 decision at that point would have been an independent  
8 implementation.

9 **Q.** Just to be career, would you tell the jury whether or not  
10 in this paragraph you're talking at all about concerns about  
11 Google doing its own independent implementation for Java APIs?

12 **A.** No. That's not what this was about.

13 **Q.** Thank you.

14 At the time that you wrote the email in Exhibit 415, did  
15 you believe that the Java API declarations were free for Google  
16 to use in developing its independent implementation of Java  
17 APIs?

18 **A.** I did.

19 **Q.** And let's take a look. What is the date of Exhibit 415?

20 **A.** February 26th, 2007.

21 **Q.** At the time that you wrote this email, did you know that  
22 Oracle was going to acquire Sun in 2010?

23 **A.** No.

24 **Q.** Okay. And at the time that you wrote this email, did you  
25 know that Oracle would --

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1           **MS. HURST:** Objection. Argumentive.

2           **MS. ANDERSON:** Your Honor, I'm --

3           **THE COURT:** It does sound argumentive to me.

4           **MS. HURST:** Leading.

5           **THE COURT:** And it's also leading. Sustained.

6           **MS. ANDERSON:** All right. Thank you, Your Honor.

7       **Q.** Let's turn our attention now to another area you were  
8       asked questions about, Mr. Bornstein. You were asked some  
9       questions and you testified about having taken action in  
10      connection with your work on Android to scrub the source code  
11      of the Android for certain words. Do you generally recall that  
12      testimony?

13      **A.** I do.

14      **Q.** And among the words you testified about were scrubbing for  
15      what's referred to as a J-word or Java. Do you generally  
16      recall that line of testimony?

17      **A.** I do.

18      **Q.** All right. Please explain to the jury why that was done.

19      **A.** The -- I'm going to say that caveat again. I'm not a  
20      lawyer. But I do understand that there is this thing called  
21      trademark law, and I do understand that companies care very  
22      much about how their trademarks are used.

23           And when we were doing what we were doing, we were  
24      intentionally using the Java programming language, and in order  
25      to use the Java programming language, you need to use the term

1 Java literally in many places in the code.

2 But that said, we wanted to be conservative with how we  
3 used that term because we did not want to inadvertently violate  
4 a trademark. So, you know, what -- what we did was we tried to  
5 look through the source code for the term and say like do we  
6 think that this might be a trademark problem and versus do we  
7 have to mention the word here because of the way the  
8 programming language works. And we tried to make reasonable  
9 judgments about -- about the cases that we found, and in cases  
10 where we thought that it was maybe a little questionable, we  
11 tried to err on the side of removing the term. That's all.

12 **Q.** Is there anything in the Android source code that relates  
13 to something called "comments"?

14 **A.** Yes. Comments are a thing that you find in practically  
15 every programming language.

16 **Q.** Was any of the scrubbing done in relation to comments?

17 **A.** Almost all of the scrubbing was in comments.

18 **Q.** Would you please tell the jury, are comments something  
19 that the computer actually runs to perform the source code?

20 **A.** No. Comments are meant for people, for programmers to  
21 read, to help them understand what's happening.

22 **Q.** And the scrubbing that was done of comments, did that  
23 scrubbing include scrubbing for other words, not just Java and  
24 the J-word?

25 **A.** Yeah. There was a big list of things that we were looking

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1 for.

2 **Q.** Could you give the jury just a few examples of the kinds  
3 of things that one on the Android team would have scrubbed for  
4 to -- to scrub the comments?

5 **A.** Yeah. The -- I mean, the biggest -- the most memorable  
6 one was we were looking for literally bad words and I'm not  
7 going to say them here, but we wanted to -- this was code that  
8 was going out to be visible to the public, to the world, and,  
9 you know, the S-word and the F-word are not generally  
10 considered professional, so we wanted to, you know, get those  
11 out of the code.

12 **Q.** And please tell the jury, was the scrubbing done to remove  
13 the J-word or Java from the comments in the Android source code  
14 in any way done to keep it a secret that Android was  
15 implementing Java APIs in its open source platform?

16 **A.** Not in the slightest. That would have been obvious in  
17 context.

18 **Q.** Why would it have been obvious?

19 **A.** Because there was all this stuff -- there were lots of  
20 Javas that remained and the -- in publishing how to work with  
21 Android, we talked about you use the Java programming language.  
22 There was absolutely no secret about the relationship that  
23 Android had with the Java programming language.

24           **MS. ANDERSON:** Thank you, Mr. Bornstein.

25           I pass the witness.

**SIDE BAR**

1       Thank you, Your Honor.

2       **THE COURT:** All right. Anything more by --

3       **MS. HURST:** Your Honor, I apologize, but I need to  
4 request a sidebar.

5       **THE COURT:** Okay. Let's have a sidebar.

6                     (The following proceedings were heard at the sidebar:)

7       **THE COURT:** What's the issue?

8       **MS. HURST:** Your Honor, my concern is the Court has  
9 already asked whether Google has impliedly waived its privilege  
10 related to all of this licensing stuff, and this witness just  
11 testified forcefully and repeatedly that he is not a lawyer and  
12 asserted that he had no capability to make these instructions  
13 because he's not a lawyer.

14                  We see right here in this document that he is passing  
15 along what he calls the lawyer-advised consensus. Your Honor,  
16 this opens the door to what's on their privileged log, we  
17 should get what's on their privileged log, and I should be  
18 allowed to ask this witness isn't it true this was the advice  
19 you got from Google's lawyers and you passed along that advice  
20 and instruction from Google's lawyers.

21       **MS. ANDERSON:** I apologize, go ahead.

22       **THE COURT:** Well is this document in evidence?

23       **MS. HURST:** Yes.

24       **MS. ANDERSON:** Yes.

25       **THE COURT:** Who put it in evidence?

**SIDE BAR**

1           **MS. ANDERSON:** Oracle's counsel.

2           **THE COURT:** Didn't you already ask about the  
3 lawyer-advised consent?

4           **MS. HURST:** But I did not ask, Your Honor, out of  
5 respect for attorney-client privilege isn't it true this was  
6 the product of an actual communication and instruction from  
7 Google's lawyers.

8           **MS. ANDERSON:** Nor did I, Your Honor.

9           **MS. HURST:** And the door has been opened to that on  
10 redirect, and I should be permitted to ask it because  
11 Ms. Anderson repeatedly asked the witness to swear and affirm  
12 that he was not a lawyer and was not making legal advice, but  
13 he was. He was passing along legal advice --

14           **THE COURT:** Is this the document that said he was not  
15 a lawyer --

16           **MS. HURST:** That was 9139.

17           **MS. ANDERSON:** This is an exhibit, Your Honor, that  
18 was produced in discovery a long time ago. Oracle offered this  
19 in evidence. Oracle elected to ask the witness about this line  
20 of this particular email. He is not a lawyer. He stated he is  
21 not a lawyer. He was only giving his state of mind to explain  
22 his belief.

23           **THE COURT:** We can't take any more time on this.  
24 Here's the answer. 415, we've known about phrase. We have  
25 been debating this phrase about lawyer-advised consensus for a

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1 long time. If that was going to be the basis for waiver, it  
2 should have been raised a long time ago. You are free to say  
3 *the lawyer-advised consensus was.* You have already done that.  
4 You can do it again, but what the --

5 **MS. HURST:** This is the one, Your Honor.

6 **THE COURT:** But this one over here where he says "I'm  
7 not a lawyer --"

8 **MS. HURST:** This is the one.

9 **THE COURT:** That's okay. He's just saying he is not a  
10 lawyer and he is acting as a lay person. I don't think that  
11 waives the privilege.

12 **MS. HURST:** Thank you, Your Honor.

13 **MS. ANDERSON:** Thank you, Your Honor.

14 **THE COURT:** Go ahead.

15 **RECROSS-EXAMINATION**

16 **BY MS. HURST:**

17 **Q.** Mr. Bornstein, in looking at Exhibit 9139, you offered  
18 that you had written, "Huge caveat, I am not a lawyer"; Right?

19 **A.** Yes.

20 **Q.** It's up at the top there. But if we look, sir, at Exhibit  
21 415 -- do you have Exhibit 415 before you?

22 **A.** Yep.

23 **Q.** And that's the one you also talked about; is that true?

24 **A.** Oh, sorry. I didn't get that you were asking a question.

25 **Q.** In that paragraph, you said "the lawyer-advised consensus

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1 is that there is potential for trouble"; right?

2 **A.** I -- yeah. I wrote that.

3 **Q.** And that's the information that you passed along at the  
4 time; true?

5 **A.** Yeah. That's reasonable.

6 **Q.** And you acted in accordance with that consensus at the  
7 time; isn't that true?

8 **A.** Yeah.

9 **Q.** All right. Now, you say that you scrubbed the Js for  
10 trademark reasons. Is that your testimony?

11 **A.** My -- my belief was that that was the primary concern.

12 **Q.** But we don't know exactly what you scrubbed because we  
13 don't have that anymore; isn't that true?

14 **A.** I'm -- what do you mean we don't have that anymore?

15 **Q.** Well, you scrubbed it out; right?

16 **A.** Well, we could -- I mean, I don't know what -- I don't  
17 know what you have in evidence, but I -- the way source code  
18 works in a professional organization, there is historical --  
19 there is usually a historical record so you could -- again, I  
20 don't know if you have access to it and I don't know --

21           **THE COURT:** Just tell us what you do know. What's the  
22 question again? You're not answering the question.

23           **MS. HURST:** Why don't I ask a new one, Your Honor.

24 **Q.** Did you bring here any examples with you today of the  
25 things that you had scrubbed out of the Android source code?

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1   **A.** I don't.

2   **Q.** All right. And you remember one of the words that you  
3 scrubbed out of the Android source code was "license." Do you  
4 remember that, Mr. Bornstein?

5   **A.** I don't specifically remember scrubbing that term myself.

6   **Q.** That was on the document that we looked at on Friday, on  
7 the long list of words that were scrubbed; is that right?

8   **A.** I'll take your word for it.

9   **Q.** "License," that's not a trademarked word, is it, sir?

10   **A.** Just -- just so -- just so I understand --

11   **Q.** Mr. Bornstein?

12   **A.** Maybe --

13   **Q.** Mr. Bornstein, "license" that's not a trademark; right?

14   **A.** No. That's -- but that's not what I was saying. I was  
15 saying the word "Java" was about trademark. The word -- the  
16 S-word wasn't about trademark either.

17   **Q.** And the word "license" is not a trademark, sir, is it?

18   **A.** The word "license" is not -- broadly not related to  
19 trademark.

20   **Q.** So when you were scrubbing the word "license," you weren't  
21 trying to protect anybody's trademarks, were you, sir?

22   **A.** Again, you're implying that I scrubbed the word "license."  
23 I don't remember doing that.

24   **Q.** When Google scrubbed the word "license," sir, it was not  
25 trying to protect anybody's trademarks, was it?

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1           **MS. ANDERSON:** Objection, foundation.

2           **THE COURT:** If you know the answer, please answer.

3           **THE WITNESS:** I don't know.

4           **MS. HURST:** No further questions.

5           **THE COURT:** Anything more, Ms. Anderson?

6           **MS. ANDERSON:** No, thank you, Your Honor.

7           **THE COURT:** All right. May this witness now be  
8 excused and discharged from any subpoena?

9           **MR. VAN NEST:** Yes, Your Honor.

10          **MS. HURST:** Yes, Your Honor.

11          **THE COURT:** All right.

12          Mr. Bornstein, you are free to go now. Thank you, sir.

13          **THE WITNESS:** Thank you.

14          **THE COURT:** You are excused from the subpoena and just  
15 take off. Take off. Okay.

16          Please collect up these documents up here and call your  
17 next witness.

18          **MR. VAN NEST:** Your Honor, Mr. Mullen is going to read  
19 a short stipulation, and then we are going to present, as I  
20 mentioned, some witness testimony by videotape and in one case  
21 a reading, and Mr. Mullen and Mr. Purcell will be handling  
22 that.

23          **THE COURT:** All right. Okay.

24          Mr. Mullen, how long is the stipulation?

25          **MR. MULLEN:** Just two sentences, Your Honor.

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1           **THE COURT:** Okay. So you're about to hear two  
2 sentences. Afterwards, I will ask Oracle counsel to tell us  
3 that this is stipulated to, and if they both agree, then it  
4 will be evidence in the case.

5           So please read slowly and distinctly.

6           **MR. MULLEN:** "On January 27, 2010, Oracle Corporation  
7 acquired Sun Microsystems, Inc., (Sun). Sun is now Oracle  
8 America, Inc., a subsidiary of Oracle Corporation."

9           **THE COURT:** So stipulated?

10          **MS. HURST:** Yes, Your Honor.

11          **THE COURT:** All right. That's now evidence in the  
12 case. Thank you.

13          All right. Next item.

14          **MR. MULLEN:** Your Honor, next I'd like to introduce  
15 our witness that we are going to be playing by video. This is  
16 prior sworn testimony from Mr. Henrik Stahl, H-E-N-R-I-K,  
17 S-T-A-H-L. Mr. Stahl provided this testimony in depositions on  
18 January 14, 2016, and on March 31, 2016. And at both times, he  
19 was an employee of Oracle.

20          **THE COURT:** And how long will the deposition last?

21          **MR. MULLEN:** Mr. Stahl's deposition is about 17  
22 minutes, Your Honor.

23          **THE COURT:** All right. So here we go. Are you ready  
24 over there to hear another video? Let's play the video.

25          (Whereupon, the video deposition was played for the jury.)

1           **THE COURT:** Is that it?

2           **MR. PURCELL:** Yes, Your Honor.

3           **MR. MULLEN:** Actually, if we could, Your Honor, we  
4 would like to read into evidence the exhibits that were  
5 referenced in Mr. Stahl's deposition.

6           **THE COURT:** Tell me the numbers.

7           **MR. MULLEN:** Those are Trial Exhibits 7362, 7381,  
8 7383, and 7389.

9           **THE COURT:** Any objection?

10          **MR. BICKS:** No objection, Your Honor.

11          **THE COURT:** All of those are received.

12          (Trial Exhibits 7362, 7381, 7383, 7389 received in  
13 evidence.)

14          **THE COURT:** All right.

15          **MR. MULLEN:** Thank you, Your Honor.

16          **THE COURT:** Next witness.

17          **MR. PURCELL:** Thank you, Your Honor.

18          Good morning. My name is Dan Purcell. I'm another one of  
19 the lawyers representing Google.

20          And next up we're going to hear some prior deposition  
21 testimony from a witness named Hasan Rizvi. And his name is  
22 spelled H-a-s-a-n. And the last name is R-i-z-v-i.

23          This deposition was taken on July 28, 2011. And, at the  
24 time, Mr. Rizvi was the senior vice president of development at  
25 Oracle.

1 It's about seven minutes long, Your Honor.

2       **THE COURT:** Seven minutes. All right. After this we  
3 will take our 15-minute break.

4 Okay. Roll the tape.

5 (Videotaped deposition of Hasan Rizvi played for the  
6 jury.)

7       **THE COURT:** All right. Is that it?

8       **MR. PURCELL:** Your Honor, that's it for that witness.  
9 Before we take our break, I would just like to move in the two  
10 exhibits that the witness discussed.

11      **THE COURT:** Very well.

12      **MR. PURCELL:** 2199, which I think has been stipulated  
13 to by the parties. And then 2223.

14      **THE COURT:** Agreed?

15      **MR. BICKS:** That's fine, Your Honor.

16      **THE COURT:** Thank you. Both received in evidence.

17 (Trial Exhibits 2199 and 2223 received in evidence.)

18      **THE COURT:** We'll take a 15-minute break at this time.  
19 Please remember the admonition.

20 (Jury out at 9:15 a.m.)

21      **THE COURT:** Can you give me the time breakdown on  
22 those read-ins.

23      **MR. MULLEN:** Yes, Your Honor. I have it here.

24      **THE COURT:** Just the percentages now, because you  
25 always give me less total time than it really took.

1           **MR. MULLEN:** I have some percentages. And they may be  
2 more than Your Honor would like, but I'll read them.

3           For Mr. Stahl, 88 percent for Google.

4           **THE COURT:** Okay.

5           **MR. MULLEN:** 12 percent for Oracle, obviously.

6           For Mr. Rizvi, that one is easy. It's a hundred percent  
7 for Google.

8           **THE COURT:** All right. So my notes show that between  
9 the stipulation and Stahl, that was 20 minutes. So 88 percent  
10 of 20 minutes, what is that? 88 percent of 20 minutes is 17  
11 minutes. 17 minutes goes to you. And 3 minutes goes to  
12 Oracle.

13           All right. So anything the lawyers need from me right  
14 now?

15           **MR. VAN NEST:** No, Your Honor.

16           **MR. BICKS:** No.

17           **THE COURT:** We'll take our 15 minutes too.

18           (Recess taken from 9:16 a.m. to 9:30 a.m.)

19           **THE COURT:** Do we have a live witness coming in?

20           **MR. VAN NEST:** We have two more short videos and then  
21 a live witness, yes.

22           **THE COURT:** As soon as the court reporter is ready,  
23 we'll bring in the jury.

24           Okay. Bring in the jury.

25           (Jury enters at 9:31 a.m.)

1           **THE COURT:** Thank you. Welcome back. Please be  
2 seated.

3           Mr. Purcell, who is your next witness?

4           **MR. PURCELL:** Our next witness is a man named Craig  
5 Gering. And we have a short clip of his deposition. And then  
6 we have a read-in. The deposition was taken on July 20, 2011.  
7 And for your notes, his last name is spelled G-e-r-i-n-g,  
8 Gering.

9           At the time of the deposition, Mr. Gering had left Oracle.  
10 But he was a Sun or Oracle employee from 1990 to 2011. And  
11 from 2006 to 2010, he worked on Java licensing and development.

12           **THE COURT:** All right. Very well. Let's -- and how  
13 long is it?

14           **MR. PURCELL:** Seven minutes, Your Honor.

15           **THE COURT:** Very well. Let's roll the tape, please.

16 (Videotaped deposition of Craig Gering played.)

17           **THE COURT:** All right.

18           **MR. PURCELL:** And, Your Honor, for -- because I know  
19 you'll ask, the breakdown of that depo time is nearly 50/50.  
20 To be accurate, it's 52 Google, 48 Oracle.

21           **THE COURT:** All right. Thank you.

22           Next witness.

23           **MR. PURCELL:** And before I do that, I'd like to move  
24 in Exhibit 2052, which I think is also preadmitted, which the  
25 witness referred to in his testimony.

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1           **THE COURT:** Agreed?

2           **MR. BICKS:** Admitted.

3           **THE COURT:** Thank you.

4           (Trial Exhibit 2052 received in evidence.)

5           **MR. PURCELL:** As I said, now we have a reading from  
6 prior sworn testimony from Mr. Gering. And on account of his  
7 similar facial hair, I thought Mr. Ragland would be the right  
8 person to read this in.

9           **MR. RAGLAND:** I will be someone else today.

10          **MR. PURCELL:** He's no longer Larry Ellison. He's now  
11 Craig Gering.

12          **MR. RAGLAND:** May I take a seat?

13          **THE COURT:** Yes. The same drill applies as before.  
14 This is just to bring to light, here in the courtroom, prior  
15 testimony.

16 So go ahead.

17           **GERING CRAIG, DEFENDANT'S WITNESS**

18          (**Transcript of deposition testimony read by Mr. Purcell**  
19 **and Mr. Ragland as follows:)**

20 **BY MR. PURCELL**

21 **Q.** Mr. Gering, you worked for Sun Microsystems from about  
22 1990, until Oracle bought Sun in 2010?

23 **A.** That's correct.

24 **Q.** And then you worked for Oracle for about a year after  
25 that?

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1     **A.**    Right.

2     **Q.**    And you left Oracle in early 2011?

3     **A.**    Yes.

4     **Q.**    When you left Oracle, you'd worked for Sun or Oracle for  
5       about 21 years?

6     **A.**    That's correct.

7     **Q.**    And in about 2006, you took over management of engineering  
8       services for the Java licensing organization for mobile and  
9       embedded devices; is that correct?

10    **A.**    Yes. There is an engineering services and a Java  
11      licensing engineering. There were two teams within that  
12      organization.

13    **Q.**    And you were part of the management team in both of those  
14      organizations?

15    **A.**    Yes.

16    **Q.**    And you were in those positions until Oracle acquired Sun  
17      in January 2010?

18    **A.**    Yes.

19    **Q.**    Mr. Gering, I just handed you Trial Exhibit 2053.

20           (Document displayed.)

21    **Q.**    This is an email you received on October 4th, 2006?

22    **A.**    Yes.

23    **Q.**    And parts of this email relate to a company called Savaje;  
24      correct? S-a-v-a-j-e.

25    **A.**    Yes.

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1   **Q.** Now, in October 2006, Savaje was a small company that had  
2   been trying to build a mobile phone operating platform; is that  
3   right?

4   **A.** Yes. I believe they were trying to deliver a phone and a  
5   phone platform to the market.

6   **Q.** And at some point after this, Sun actually bought Savaje;  
7   correct?

8   **A.** Yes.

9   **Q.** And Sun bought the entire company, its personnel, its  
10   technology; is that right?

11   **A.** Yes. What was left of it at the time. It had shrunk over  
12   a period of time between this email and when it was purchased.

13   **Q.** Now, have you ever heard the term "full stack" with  
14   respect to mobile operating platforms?

15   **A.** Within Sun at the time there were multiple terms used to  
16   refer to building a complete mobile platform. "Full stack" was  
17   one of them. "Vertical platform" was another.

18   **Q.** Now, a full stack or a vertical platform, that would  
19   include multiple layers of software; correct?

20   **A.** Yes, it was used in comparison to the Java being a  
21   horizontal play across multiple devices and platforms.

22   **Q.** So Java wasn't a full stack; correct?

23   **A.** At that time, no. Java was a horizontal approach across  
24   multiple platforms. This included everything in Java Plus.  
25   All the drivers you need to talk to the hardware and operating

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1 system. Those kind of things which weren't part of Java.

2 Q. So in contrast to Java, Android, the Google platform that  
3 eventually came out, Android was a full stack; correct?

4 A. Uhm, in how -- how it was referred to in that time, my  
5 understanding is yes.

6 Q. And Apple's iPhone operating system, that was also a  
7 full stack; correct?

8 A. Oh, it's a completely closed platform. So I don't  
9 actually -- I don't know, actually, what's in there. But the  
10 highest level of trying to get -- characterize those things,  
11 yes.

12 Q. At the time Sun bought Savaje, Sun didn't have a full  
13 stack on the market; correct?

14 A. That's correct.

15 Q. But you do know that Sun, after acquiring Savaje,  
16 attempted to turn the Savaje technology into a full stack  
17 platform; correct?

18 A. I know there were plans to build a stack of some sort. I  
19 don't know if it was a completely full stack or a mostly full  
20 stack. That I don't know.

21 Q. The project that Sun pursued to build a stack from the  
22 Savaje technology, that was internally at Sun called Project  
23 Arcadia; correct?

24 A. So there were multiple projects for that basic idea of the  
25 vertical offering. It was called Arcadia at one point in time,

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1 but it changed names a few times based on where it was in the  
2 organization, who it was reporting to. And I'm not sure if the  
3 feature sets changed or not with it. It was referred to with  
4 multiple names over a period of time.

5 **Q.** If Sun had gotten the Project Arcadia technology to  
6 market, it would have had a full stack on the market to compete  
7 with Android; correct?

8 **A.** I don't remember the exact details of what Arcadia was  
9 versus the initial Savaje acquisition. So I don't recall if  
10 the Arcadia project was still a complete full stack or mostly a  
11 full stack. I just don't recall the details.

12 **Q.** Mr. Gering, as you sit here today, you're not aware of any  
13 product that Sun brought to market based on the technology Sun  
14 bought from Savage?

15 **A.** No.

16 **Q.** And, certainly, Sun never brought a full stake mobile  
17 operating platform to market based on the Savaje technology;  
18 correct?

19 **A.** No, not to my knowledge.

20 **Q.** In fact, during your time at Sun, Sun never brought a full  
21 stack mobile operating platform to market at all, did it?

22 **A.** No.

23 **Q.** All right. So you were at Sun when Google released  
24 Android; correct?

25 **A.** Yes.

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1   **Q.** And you were aware that Google had released Android?

2   **A.** I was aware of Android being in the marketplace. I don't  
3 know the exact date.

4   **Q.** After Google released Android, Sun made an effort to  
5 develop technologies that would work with Android; correct?

6   **A.** There was a point in time when we did technical  
7 explorations of various technologies that we had in-house, with  
8 Android, for different reasons.

9   **Q.** I've just handed the witness Trial Exhibit 2052.

10       Mr. Gering, there is a presentation on -- a Sun-formatted  
11 presentation titled "Java and Wireless Business Review." Do  
12 you see that?

13           (Document displayed.)

14   **A.** Yes, I do.

15   **Q.** And your name is there on the front page; correct?

16   **A.** Yes, it is.

17   **Q.** It's dated March 16, 2009?

18   **A.** Yes.

19   **Q.** So just going by the timeline, that's after Google  
20 released the Android platform in October 2008.

21   **A.** Okay.

22   **Q.** Could we turn to page 20 of the document.

23           (Document displayed.)

24   **Q.** This page discusses something called Project Daneel. Do  
25 you see that?

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1   **A.** Yes, I do.

2   **Q.** And Project Daneel was also known inside Sun as Project  
3   Sundroid; isn't that right?

4   **A.** There was a Project Sundroid. There was a Project Daneel.  
5   They had a lot of the same similar characteristics. I don't  
6   remember if they were exactly the same or not.

7   **Q.** All right. The idea of both Project Daneel and Project  
8   Sundroid was to try to insert a Sun Java virtual machine into  
9   the Android platform in place of Google's Dalvik virtual  
10   machine; right?

11   **A.** Yes. Daneel project had two -- it had multiple phases.  
12   The first phase was to put Sun's VM and stack next to the  
13   Google stack that was 0, a Google VM. So it had two VMs on  
14   that stack. And that was called a Google stack approach.

15                 And then the second, the Phase One, which was the second  
16   phase, was to actually replace the VM with Sun's VM.

17   **Q.** And that's reflected here on Trial Exhibit 2052. There's  
18   a reference to Phase 0 and Phase 1?

19   **A.** Yes.

20   **Q.** And there's also Phase 2, which is a full Linux platform.  
21   Do you see that?

22   **A.** I do.

23   **Q.** So Project Daneel ultimately would have evolved into a  
24   full stack. Is that how you understand that?

25   **A.** So my memory of Daneel is Phase 0 and Phase 1 were fairly

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1 well defined. And Phase 2 was not as well defined, at least as  
2 I recall.

3 **Q.** So as far as you recall, Sun never really developed a  
4 concrete definition of Phase 2 of Project Daneel?

5 **A.** More accurately, I think there were multiple definitions  
6 at that Symbian-Daneel time. But I just don't recall what  
7 were the contents of that bucket, because we were focused --  
8 the engineering team was focused on Phase 0 and Phase 1.

9 **Q.** With respect to Project Daneel, Sun got as far as  
10 developing a Phase 1 prototype of a Sun virtual machine running  
11 on the Android platform in place of the Dalvik virtual machine;  
12 is that right?

13 **A.** That's correct.

14 **Q.** But that was as far as it went; correct?

15 **A.** As far as I know.

16 **Q.** The product that was developed in Project Daneel never got  
17 to market; correct?

18 **A.** Correct.

19 **Q.** Mr. Gering, I just handed you Trial Exhibit 2061.

20 (Document displayed.)

21 **MR. PURCELL:** If we could blow up the top half of  
22 that.

23 Thank you, Ben.

24 **BY MR. PURCELL**

25 **Q.** This is an email that you sent to Vineet Gupta in

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1 January 2009; correct?

2 **A.** Yes.

3 **Q.** First off, Mr. Gupta, in January 2009, his job at Sun was  
4 negotiating Java licenses with manufacturers of mobile phones;  
5 correct?

6 **A.** He was the CTO of the -- he was in charge of the SEs and  
7 also the CTO for the embedded sales force. So as part of that  
8 responsibility, he was involved in those discussions.

9 **Q.** Mr. Gupta is referring there in the second paragraph,  
10 "I've been getting several requests regarding partnering with  
11 us to provide a Dalvik/Java ME combined platform. Samsung is  
12 really pushing for partnership discussions ASAP."

13 Do you see that?

14 **A.** Yes.

15 **Q.** And in the next paragraph he refers to, "Samsung, HTC,  
16 Sprint, T-Mobile, LGE are the top candidates approaching us."

17 Do you see that?

18 **A.** I do.

19 **Q.** Those are some of the most prominent phone manufacturers  
20 in the world, aren't they?

21 **A.** Yes, they're a subset of them, yes.

22 **Q.** Despite Mr. Gupta's optimism that there were these  
23 opportunities out there for Sundroid, with some of the most  
24 prominent mobile phone manufacturers in the world, Sun still  
25 never managed to get a Sundroid product to market; correct?

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1     **A.** Sun did not bring a Sundo product to market.

2     **Q.** Mr. Gering, this document is Trial Exhibit 3508. And,

3 Mr. Gering, this is an email you received in October 2009.

4                  Do you see that?

5                  (Document displayed.)

6     **A.** Yes, I do.

7     **Q.** And it attaches a couple of presentations?

8     **A.** Yes, I see it.

9     **Q.** If we can just look at the first presentation right after  
10 the cover email. It's called "OneJava Market Landscape  
11 Discussion." Do you see that?

12    **A.** I do.

13    **Q.** And if we could just go to the second page.

14                  (Document displayed.)

15    **Q.** Looking at the second bullet point there, that's "Sun's  
16 leadership around Java is perceived as stagnant, and Java is  
17 considered legacy."

18                  Do you see that?

19    **A.** I do.

20    **Q.** First bullet under that says, "Stagnant innovation." Do  
21 you see that?

22    **A.** Yes.

23    **Q.** The third bullet says, "Fragmented between Java SE and  
24 Java ME, and between Java ME mobile and TV and within mobile  
25 and TV."

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1       Do you see that?

2       **A.** I do.

3       **Q.** Now, all those references there to Java SE, Java ME, those  
4 are different Java platforms, correct?

5       **A.** Java ME and Java SE were two different editions of Java.

6       **Q.** And there's no mention on this slide of fragmentation of  
7 Java due to Android; correct?

8       **A.** I don't see any.

9       **Q.** This is just fragmentation within Sun's own Java products;  
10 correct?

11      **A.** So I don't -- what I -- I don't recall fragmentation being  
12 used this way, in my experience with ME.

13      **Q.** Well, it's used that way on the slide, isn't it?

14      **A.** I understand that.

15      **Q.** And you were explaining the -- your use of the word  
16 "fragmentation" and your response to questioning from Google's  
17 counsel.

18           Can you continue your answer, please.

19      **A.** So as I recall fragmentation within the ME world, it  
20 really referred to -- there's two distinct things I remember.  
21 One is hardware fragmentation, meaning that different devices  
22 had different capabilities. And sometimes the software dealt  
23 with that properly and sometimes it didn't.

24           So, for example, like if a device had a point or it  
25 didn't --

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1       **Q.**   Slow down just a bit.

2       **A.**   Sorry.

3                 So that was one type of fragmentation. And the second  
4       type of fragmentation was incompatibility with bugs, or  
5       performance problems between implementations by different  
6       vendors.

7                 So the way Java came to market is, different people built  
8       implementations of it. They licensed it. They built  
9       implementations of it. And sometimes there were bugs or  
10      performance issues which would cause some applications to work  
11      in one device but not in another. So that's how I remember  
12      "fragmentation" being used.

13               **MR. PURCELL:** Your Honor, that's all for that witness.

14               **THE COURT:** All right. Thank you.

15               **MR. PURCELL:** And the breakdown is 95 Google, 5  
16      Oracle.

17               **THE COURT:** All right. Thank you.

18               **MR. PURCELL:** And, finally, we'd just like to move in  
19      the three exhibits that aren't already in, that were used with  
20      that witness; which are 2053, 2061, and 3508.

21               **THE COURT:** Agreed?

22               **MR. BICKS:** Yes, Your Honor.

23               **THE COURT:** All received. Thank you.

24                 (Trial Exhibit 2053, 2061, and 3508 received in  
25      evidence.)

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1           **MR. PURCELL:** Thank you, Your Honor.

2           **THE COURT:** Next witness.

3           **MR. MULLEN:** One final video play, Your Honor.

4           Ladies and gentlemen, the next witness you're going to  
5 hear from is Mr. Terrence Barr. T-e-r-r-e-n-c-e. B-a-r-r.

6           He provided testimony in a deposition on December 9, 2015.  
7 And at the time of that deposition, he was an employee of  
8 Oracle.

9           **THE COURT:** Thank you.

10          And how long will it be?

11          **MR. MULLEN:** The deposition is about 11 minutes.

12          **THE COURT:** Okay.

13          (Videotaped deposition of Terrence Barr played.)

14          **MR. MULLEN:** That's the end of the video portion of  
15 the day, Your Honor. But I would like to move into evidence  
16 the three exhibits that Mr. Barr discussed in his depo.

17          **THE COURT:** Sure.

18          **MR. MULLEN:** Those are 7459.1, 7460.1, and 7234.

19          **MR. BICKS:** No objection, Your Honor.

20          **THE COURT:** Received.

21          (Trial Exhibits 7459.1, 7460.1, and 7234 received in  
22 evidence.)

23          **THE COURT:** Thank you.

24          Next witness.

25          **MR. MULLEN:** Our next witness is going to be

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1 Dr. Astrachan, Your Honor.

2 But before we do that, we have two RFA responses that we  
3 would like to read into the record.

4 **THE COURT:** How long will they take?

5 **MR. MULLEN:** They are very short. Should be one  
6 minute.

7 **THE COURT:** Okay. I need to explain what "RFA" means.

8 You know, you've already learned over there in the jury  
9 box that in litigation both sides can go take depositions  
10 before the trial comes up. Another thing they can do is ask  
11 the other side to request to admit something. Like admit that  
12 the sky is blue. You know. And you would either say admitted  
13 or not admitted. Maybe the sky is gray. They say, "No. The  
14 sky is gray. We don't admit that."

15 Anyway, they get to ask these questions. And the other  
16 side has to respond under oath. And every now and then one of  
17 these actually gets used in a trial, like now.

18 So this is evidence that you're about to hear. So what  
19 counsel will do is read the statement that was asked to be  
20 admitted, the truth of, and then the other will read the -- I  
21 guess it's Oracle's response; right?

22 **MR. MULLEN:** Yes.

23 **THE COURT:** All right. So you may read slowly and  
24 distinctly.

25 And this is the only time you're going to hear this, so

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1 please go ahead.

2           **MR. MULLEN:** Okay. So there are two of these. Start  
3 with the first one.

4           "Admit that in May 2007, Sun released the code for  
5 Java SE containing the APIs at issue under the terms of  
6 the GNU General Public License with the Classpath  
7 Exception (GPLv2+CE) as part of the OpenJDK project.

8           "ANSWER: Admitted."

9           Second request for admission:

10          "Admit that Oracle continues to release the code for  
11 Java SE containing the APIs at issue under the terms of  
12 the GNU General Public License with the Classpath  
13 Exception (GPLv2+CE) as part of the OpenJDK Project.

14          "ANSWER: Admitted."

15          **THE COURT:** All right. So both of those two things  
16 that you just heard are admitted and are evidence in the case.

17          Thank you.

18          **MR. MULLEN:** Thank you, Your Honor.

19          Thank you, ladies and gentlemen.

20          **THE COURT:** Next.

21          **MR. PAIGE:** Your Honor, Google calls Professor  
22 Astrachan to the stand.

23          **THE COURT:** All right. Let's bring him in.

24          (Pause)

25          **THE COURT:** You must be the professor.

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1           **THE WITNESS:** I am indeed, sir.

2           **THE COURT:** Please raise your right hand and take an  
3 oath to tell the truth.

4           **OWEN ASTRACHAN, DEFENDANT'S WITNESS, SWORN**

5           **THE CLERK:** Please state your name for the Court, and  
6 spell your last name for the record.

7           **THE WITNESS:** My name is Owen Astrachan.

8 A-s-t-r-a-c-h-a-n.

9           **THE COURT:** All right.

10          **MR. PAIGE:** Good morning, ladies and gentlemen. My  
11 name is Gene Paige. I'm one of the attorneys for Google.

12          **THE COURT:** Go ahead.

13           **DIRECT EXAMINATION**

14          **BY MR. PAIGE**

15          **Q.** Good morning, Professor Astrachan. How are you?

16          **A.** Good. Thanks.

17          **Q.** Can you please introduce yourself and let the jury know  
18 what you do for a living.

19          **A.** My name is Owen Astrachan. I'm a teacher. I'm a  
20 professor of computer science at Duke University in North  
21 Carolina.

22          **Q.** And can you briefly describe your educational background.

23          **A.** Sure.

24           I have a bachelor of arts in mathematics that I earned  
25 from Dartmouth College. And then I earned a master of arts in

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1 teaching when I was a high school teacher, teaching  
2 mathematics. And then subsequent to that I earned master of  
3 science and Ph.D. degrees in computer science, also from Duke.

4 Q. What are your research interests at Duke?

5 A. My research interests have been built on developing  
6 curriculum, tools and resources for teaching about computer  
7 science and programming at undergraduate level and high  
8 schools.

9 Q. What sort of students do you teach?

10 A. I teach, primarily, undergraduate students from the  
11 beginning of their time as computer science majors through  
12 their senior year. And I also teach courses for non-majors who  
13 might be interested in understanding computer science.

14 Q. When did you first start using computer programming  
15 languages.

16 A. I was fortunate to have an after-school program. And I  
17 wrote my first basic program in 1973. And then I continued to  
18 write basic programs when I was an undergraduate. And I also  
19 took one course in computer science, where we used Algol and  
20 PL1.

21 And when I started teaching high school, I learned Logo.  
22 I continued to learn Basic. I learned Pascal and a few other  
23 languages. And then in graduate school I learned C and C++,  
24 Modula, Lisp, more languages.

25 And I continued to learn Java and Python as I started

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1 teaching computer science.

2 **Q.** So you're familiar with the Java programming language?

3 **A.** I am. I have written many programs in Java. I teach many  
4 courses that use Java programming language.

5 **Q.** How did you first learn Java?

6 **A.** I first learned Java right in about 1995, when it came  
7 out, so I could begin teaching with it. And I read books and  
8 used some online sources to help me understand how Java worked  
9 and how the API libraries with it worked as well.

10 **Q.** When you first learned Java, how did it compare to  
11 computer languages with which you were already familiar?

12 **A.** Java is an object-oriented language, which means it uses  
13 classes. And that's similar to C++, a language with which I  
14 was very familiar because I had been using it for several years  
15 in both my research and my teaching.

16 So it was relatively straightforward to pick up Java  
17 because, conceptually, it was related to C++. And, also, the  
18 API libraries were similar to C and C++ as well.

19 **Q.** What courses, if any, have you taught on Java?

20 **A.** The first course I taught in Java was in 1996. That was  
21 an advanced course in software design. And we continue to use  
22 Java in that course today.

23 We also began using Java in our first courses for majors  
24 in the early 2000s. And I still teach a course with Java.  
25 That's the second course that our majors take, and we continue

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1 to use it there.

2 **Q.** Have you won any awards?

3 **A.** I've won several teaching awards at Duke for my teaching.

4 I've won an award, when I was on leave, at the University of  
5 British Columbia, in Canada, for teaching a Java course when I  
6 was there for one year.

7 And I've won some awards from the National Science  
8 Foundation.

9 (Reporter interrupts.)

10 **A.** Sorry.

11 I've won an award for teaching a Java course at University  
12 of British Columbia. I've also won some awards from NSF, for  
13 the work I do on my research and teaching.

14 **MR. PAIGE:** Your Honor, may I approach the witness?

15 **THE COURT:** Yes.

16 **BY MR. PAIGE**

17 **Q.** Professor Astrachan, I've handed you Trial Exhibit 7642.1.

18 Could you take a look at it and identify that document?

19 **A.** This is a copy of my curriculum vitae, my CV or resume.

20 **MR. PAIGE:** Your Honor, we move the admission of  
21 TX 7642.1.

22 **MS. HURST:** That's fine, Your Honor.

23 **THE COURT:** All right. It's received in evidence.

24 (Trial Exhibit 7642.1 received in evidence.)

25

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1 BY MR. PAIGE

2 Q. Professor Astrachan, have you been retained by Google in  
3 this case?

4 A. I have.

5 Q. And are they compensating you for your time in this case?

6 A. They are.

7 Q. Okay. What assignment were you given by Google?

8 A. I was asked to look at the 37 API package labels that are  
9 at issue in this case and to develop opinions about how those  
10 API package labels are used on the Android platform as part of  
11 creating Android.

12 Q. What did you do to form your opinions on that subject?

13 A. I used my understanding of programming languages, and of  
14 Java in particular. I used my knowledge of Android and  
15 programming. And I wrote software that I used to analyze the  
16 code base for both Android and Java SE, as part of developing  
17 my opinions.

18 Q. And could you just tell the jury, at a high level, what  
19 the opinions you developed were.

20 A. At a high level, Google is using the 37 API packages, the  
21 labels, the method declarations from these 37 API packages in  
22 creating a new context, the Android Operating System.

23 So in my technical analysis using the code bases for  
24 these, I've seen that the 37 API labels are combined with new  
25 implementing code as part of creating the Android Operating

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1 System and full stack platform.

2 And they've used C++ and Java libraries also optimized and  
3 designed for a mobile platform in creating Android.

4 I also see that these API levels, the method declarations  
5 and class declarations, are by nature functional because that's  
6 what API labels are. And, in particular, these API labels are  
7 short, descriptive and functional in terms of what they do.

8 And the API label declarations are very small part of the Java  
9 SE platform.

10 In creating -- in develop -- in using these labels to make  
11 Android, we see that Java is still the number one programming  
12 language in the world, and these API package declarations are  
13 part of the OpenJDK release of Java SE.

14 **Q.** So before we go into the details of your opinion, I would  
15 like to have you give the jury a little background.

16 Can you explain to the jury what a computer programming  
17 language is.

18 **A.** Sure. And I have a slide that shows some of this  
19 information.

20 At the lowest level, programs run on computers. That's  
21 why they're called computer programs. And those are 0s and 1s.

22 But when we talk about programming languages, we're  
23 talking about languages like Java and C++. That's the source  
24 code that you see in this diagram on the right.

25 And the process of taking a program written in these

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1 high-level languages, in Java and C++, if you look at the  
2 language, they look a little more like English, a language that  
3 you would, kind of, be able to read and write, not like the 0s  
4 and 1s that are actually executed on the computer.

5 And the high-level source code is translated -- in the  
6 diagram you see it's compiled -- into the binary code or 0s and  
7 1s that are executed on the computer.

8 **Q.** And you have two different types of setups there.

9 Can you explain to the jury what the top and bottom ones  
10 are.

11 **A.** Sure. In some languages, like C++, when that source code  
12 is compiled or translated into the 0s or 1s, that binary code  
13 runs directly on the hardware.

14 And in a language like Java, there's a virtual machine.  
15 And the source code in Java is compiled into bytecode. And  
16 that bytecode is run on the virtual machine, which turns it  
17 into the 0s and 1s that are executed on the computer.

18 But their process is the same in both languages. Starting  
19 with source code and ultimately getting to the 0s and 1s that  
20 are the computer program that runs.

21 **Q.** What are the differences, if any, between languages that  
22 use virtual machines and those that do not?

23 **A.** The virtual machine has a small overhead. So often  
24 programs that are run on the virtual machine might run slightly  
25 more slowly than they do for programs that don't use the

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1 virtual machine.

2 Q. Was Java the first language to use a virtual machine?

3 A. No. Virtual machines had been used for years before Java.

4 The P-code virtual machine ran both Pascal and PL1. So there  
5 were virtual machines in existence before Java.

6 Q. Why do computer programmers use high-level computer  
7 programming languages?

8 A. It would be really hard to write a program just with 0s  
9 and 1s. So the high-level programming languages allow  
10 programmers to be productive and effective in making the  
11 programs and applications that they do as part of their job and  
12 their hobbies.

13 Q. Can a computer programmer who writes in one language  
14 generally write in any computer language?

15 A. Well, you have to pick up the new language. But once  
16 you've learned one language and the libraries that are  
17 associated with it, it's usually reasonably straightforward to  
18 pick up a new language and the new API libraries, especially if  
19 those languages are similar.

20 But computer languages are much closer to each other than,  
21 say, if I already know Spanish, it would be really hard for me  
22 to learn Chinese. The alphabets are different. The words are  
23 different.

24 But when you know Java and the libraries associated with  
25 it, it's relatively straightforward to be able to pick up a new

1 language because the source languages and the libraries are  
2 often very similar.

3 **Q.** Now, could you explain to the jury what an application  
4 programming interface is.

5 **A.** Sure. We've heard "application programming interface" or  
6 "API."

7 And that's a piece of software that allows you to connect  
8 my -- the program I'm writing as the developer with code  
9 written that's stored in the library. So the API is one way  
10 that I can write my code and use code that someone else has  
11 developed.

12 **Q.** What is an API used for by programmers?

13 **A.** Well, as I explained, when I write my source code, my  
14 software, I could write everything myself. But some programs  
15 would be unbelievably long and complicated.

16 For example, the process of opening a Web page in a  
17 program would be really long. Or Internet protocols and Web  
18 protocols I would have to understand, I would like to just be  
19 able to say "open a Web page," and then have thousands of lines  
20 of code that were needed to actually open that Web page and get  
21 it. It would be wonderful if those were already written and  
22 debugged and robust and I could just use that code.

23 So what the API does in this case, the label "open Web  
24 page" would be enough for me to use in my program and then  
25 access the thousands of lines of implementing code that had

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1 already been written and tested.

2 So in that case, the API is, I write the code that says  
3 "open Web page," and then I access the step-by-step  
4 functionality that's part of the implementing code that lets me  
5 actually accomplish that task.

6 **Q.** Now, can you provide the jury with an example of something  
7 in everyday life that's comparable to an API?

8 **A.** Sure.

9 I have an example that I often use in my classes. And I  
10 have an exhibit that we've created to kind of explain that.

11 Probably everybody has been in a car. Most of us have  
12 been a driver in a car.

13 And when you get into a car, even if you've never had that  
14 model car before, whether it's a convertible or a pickup truck  
15 or a smart car, we know that the steering wheel, when you turn  
16 it to the left, the car goes to the left. When the steering  
17 wheel turns to the right, the car goes to the right. And that  
18 works whether the steering is a rack and pinion or power  
19 steering.

20 So the steering wheel is this, kind of, API that allows me  
21 to operate the car without knowing how the underlying steering  
22 mechanism works.

23 The accelerator works the same way. I know, in any kind  
24 of car I get into, when I press down on the accelerator, the  
25 car is going to go. And when I ease up, the car slows down.

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1       And that works whether it's an electric car, a V6, a V8,  
2 fuel injection.

3                     (Reporter interrupts.)

4       **A.** Sorry. Sure.

5               If the car has an electric engine, or a fuel-injected  
6 engine, a V6, a V8, when you press down, the car goes. And I  
7 don't have to know how the drive shaft works our how the  
8 pistons work. So all that functionality of how the engine  
9 works is accessed by the accelerator that works the same way.

10          Brakes work in a similar way. When I press the brake, I  
11 know that some kind of brake, disk brake, caliper, is going to  
12 stop the car.

13          So these aspects of driving, steering wheel, accelerator,  
14 brake, they serve as a kind of analogy because I can use them  
15 to accomplish the task of driving my car without knowing how  
16 the underlying system works, without having to understand what  
17 kind of engine it is.

18          And the API software also allows me to access that  
19 functionality of the implementing code without needing to  
20 understand exactly how it works, just being able to rely on the  
21 step-by-step instructions that I've accessed by using the label  
22 declaration of the API.

23       **Q.** How does use of APIs help computer programmers that are  
24 trying to program in other contexts or other platforms?

25       **A.** Well, I talk about how, first, it saves me the time from

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1 having to write the thousands of steps that might be needed.

2       And if an API in one language is the same between  
3 platforms, whether I might be writing for a desktop or a mobile  
4 device, if I can rely on that API being used to access that  
5 same functionality, that will help me develop software more  
6 easily.

7 **Q.** And can you --

8           **THE COURT:** Can I ask a question on this?

9           **MR. PAIGE:** Of course.

10          **THE COURT:** It sounds like, you know, you've drawn a  
11 distinction between the label or the declaring code and then  
12 the implementing code; right?

13          **THE WITNESS:** Yes.

14          **THE COURT:** Okay. As you use the term "API," it  
15 sounds like you're referring to the collection of all of the  
16 labels and not including the implementing code; is that  
17 correct?

18          **THE WITNESS:** I'm -- I'm trying to be careful because  
19 I understand that what we're talking about here is just the  
20 declaring code. And so I'm trying to say declaring code in  
21 API.

22          But API as a term is reasonably broad. And in teaching  
23 with it and understanding how software engineers use it, an API  
24 by itself could refer to API services, or the implementing  
25 code, or, kind of, a general understanding of how to use the

1 API.

2 So I'm trying to be precise here in saying the label  
3 declarations, that's the declaring code that we're talking  
4 about. But I might slip a few times and say "API," and end up  
5 encompassing the implementing code.

6 So what I know here is that we're talking about just the  
7 declaring code for what Google used at the beginning of  
8 creating the Android platform.

9 So I'll try to not use "API" in this all-encompassing way.  
10 Although, I think that's part of the general confusion that  
11 we've seen that can mean this conceptual piece or the  
12 implementing code.

13 **THE COURT:** All right. Thank you.

14 Go ahead.

15 **BY MR. PAIGE**

16 **Q.** It seems like it's a good time, Professor Astrachan, to  
17 perhaps explain to the jury the parts of the API. Could you do  
18 that?

19 **A.** Sure.

20 The API -- and I've got a diagram that shows this; and  
21 this goes to what Judge Alsup just asked -- includes, for the  
22 purposes of what we're talking about here, the method  
23 declaration. That's the label that we've been referring to  
24 when we talk about the labels of the declaring code.

25 And that's in yellow, that you see on this slide. And

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1       this particular method, we see the name of the method. That's  
2       shown as "compareto." And in Java, that would be in a class,  
3       in a package, that's also part of this API not shown there.

4           And the method declaration "compareto" -- API methods also  
5       have an input and an output. We've heard that before.

6           You can think of things like in a calculator when square  
7       root might be the name of the API. And it has input, you put  
8       in the number 25. And then you have an output. You get back  
9       5.

10          In this case, the method declaration has a name,  
11       "compareto"; an input, that's labeled as "String  
12       anotherString," that's what goes into this method; and then an  
13       output. That's the return type. That's shown as "int."

14          So, in general, all these method declarations have a  
15       name -- and in Java that includes the class and package name --  
16       and an input or parameter, and output, the return type. Name,  
17       parameter, return type.

18       **Q.** And can you point to where the return type perimeters are  
19       found there on the slide?

20       **A.** When you read "public int," the "int" is the return type;  
21       "compareto" is the name of the method; and then "anotherString"  
22       is the parameter.

23           So it starts with the return type, then the name of the  
24       method, and then the parameter. Those all together create the  
25       method declaration.

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1     **Q.** Now, can you explain to the jury what the implementation  
2     of an API is?

3     **A.** Sure.

4                 I've talked before about how this one label allows me to  
5     access all the functionality as a programmer, so I don't have  
6     to write it myself over and over again.

7                 Here, the implementing code is shown in gray. And that's  
8     this step-by-step sequence of instructions that would actually  
9     get ultimately executed as 0s and 1s when I call the API label.

10                So I use the label to access the functionality. And that  
11     gray step-by-step sequence of instructions then returns my  
12     result. So there's the declaration and the implementing code.

13     **Q.** And what's at issue in this cases, Dr. Astrachan?

14     **A.** In this case, what's at issue is just the declaring code,  
15     just what you see in yellow on that slide, the return type, the  
16     name that includes the package and class, and the parameters.

17     **Q.** Can you explain to the jury what might happen if you had  
18     APIs change?

19     **A.** Sure.

20                Here's another example that might make sense for what an  
21     API is.

22                If you use software and you print a Web page or print a  
23     wordprocessing document, sometimes you see "print" in the file  
24     menu. And that might be control P or command P. That just  
25     makes things print.

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1       What would happen if, all the sudden, control P or command  
2 P meant paste, because P starts with paste. Then printing  
3 wouldn't work anymore. So that if the API changed so that  
4 command P meant paste, then users of that file menu and their  
5 software wouldn't be able to accomplish their tasks.

6       The same thing would happen for a software developer. If  
7 the API labels change, then either the software wouldn't  
8 continue to work anymore or the developer would have to use a  
9 whole -- would have to learn a whole new language to be able to  
10 use these API labels.

11 **Q.** Can you explain to the jury what libraries for programming  
12 languages are.

13 **A.** Sure. A library -- well, in this file menu that I talked  
14 about, if you've used software before, you know in the file  
15 menu you see "print" and "new" and "open" and "save." That's a  
16 collection of operations that are in one place. The file menu.

17       And a library in software is kind of the same idea.  
18 Classes or ideas that are grouped together are in the same  
19 library. And the methods that are in the class that are in a  
20 library all would be related functionality. So a library is a  
21 collection of related software.

22 **Q.** Are there other names for libraries in computer languages?

23 **A.** There are.

24       In Java, we use the word "package." That's, kind of, a  
25 required name in Java. And "package" is a library.

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1 A package contains classes in Java that are related.

2 Conceptually related. So a package in Java is a library.

3 Q. And what's the relationship between libraries and computer  
4 programming languages?

5 A. In order to make effective use of a programming language,  
6 you need libraries. We can't write all the code ourselves.

7 And sometimes it wouldn't even be possible, without libraries,  
8 to do things like print or make your program run.

9 So for developers and programmers to be effective, you  
10 have to have libraries that are essentially associated with the  
11 language, to be a productive program.

12 Q. I would like to turn, now, to talk a little bit about  
13 Java.

14 When were the Java APIs initially created?

15 A. The Java APIs, along with the Java programming language,  
16 were first introduced to the public in about 1995. So we had  
17 the language and the APIs that were released at the same time.

18 Q. And you've said in Java that libraries are called  
19 "packages." Can you explain to the jury how Java organizes the  
20 material within those packages?

21 A. Sure.

22 I mentioned that Java is an object-oriented language,  
23 which just means that we use the word "class" to encompass a  
24 bunch of code, a bunch of concepts that are realized in code.

25 So in Java, a package is a collection of classes. That's

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1 required by the language. And each class is a collection of  
2 methods and a few other things.

3 So the organization in Java, that's required by the  
4 language, is a package. It's a collection of classes. That's  
5 software. And each class is a collection of methods.

6 So these labels are methods within the class that are part  
7 of a package in Java.

8 **Q.** And what's the order of naming in these labels?

9 **A.** We typically, and the way Java kind of requires things to  
10 write is you say, package name, class name, method name.

11 **Q.** And how do the names of the labels relate to the  
12 structure, sequence and organization of Java SE?

13 **A.** Well, the Java Language requires that we use package name,  
14 class name, method name in describing these labels.

15 So if we saw something like the max method, that we saw  
16 Mr. Bornstein write, that would be java.lang, that's the  
17 package, .map, that's the class, .max, that's the method.

18 So that sequence of package name, class name, method name,  
19 that's required by the language, and that's how Java works.

20 **Q.** So is the name of the method interchangeable with the SSO  
21 of the method?

22 **A.** I treat the names -- because they start package name,  
23 class name, method names. That is the structure, sequence and  
24 organization that Java requires us to use. So I, kind of,  
25 treat those declarations in the SSO as the same.

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1   **Q.**   What's your understanding of Java's place in the world of  
2   programming languages today?

3   **A.**   I know that Java is really widely used in teaching in the  
4   academic setting I work in. And I know that the students I  
5   teach go out and get jobs writing Java. And I also know that  
6   on Oracle's website it says that Java is the number one  
7   programming language. So it's really widely used.

8   **Q.**   And do you have an understanding as to how Java became so  
9   popular?

10   **A.**   Well, I know in part how it became popular.

11           When Java was first released in 1995, Sun made a great  
12   effort to make Java and the API libraries available to both me  
13   in my teaching responsibilities, but also to companies that  
14   would be able to use Java. And they developed programming  
15   environments. Some specifically for professional programmers.

16           We've heard, maybe, about NetBeans here. But also for  
17   beginning programmers. So there's a programming environment  
18   called Blue Jay, that was supported by Sun, designed  
19   specifically for teaching.

20           So Sun took great, kind of, care and steps to make sure  
21   that Java and the APIs were both well-known and easy to use for  
22   both teaching purposes and for developers writing programs.

23   **Q.**   Now I would like to talk about the Java platform.

24           Could you tell the jury about what versions there are of  
25   the Java platform?

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1   **A.**   We've heard about three platforms here, and I, kind of,  
2 have a graphic that describes them all.

3                 The Java Standard Edition, that we see in the middle,  
4 that's Java SE, that's used by developers to create programs  
5 that run on desktop and laptop computers and maybe small  
6 servers. So Java SE is the platform that we're talking about  
7 here. And it has about 166 packages in it.

8   **Q.**   What's the Java Enterprise Edition?

9   **A.**   The Java Enterprise Edition, that you see on the left, is  
10 used for enterprise applications. That would be, kind of, big  
11 server applications or things that you would deploy in a  
12 business with thousands of computers.

13                 And that has a hundred more packages, roughly, than we see  
14 in Java SE because those programs have, kind of, a different  
15 functionality or purpose than they do on the ones -- than the  
16 ones that run on your laptop or desktop computer.

17   **Q.**   And can you tell the jury a little bit about the Java  
18 Micro Edition?

19   **A.**   We see there on the right the Micro Edition that we've  
20 heard it's a programming platform used on feature phones. And  
21 that has far fewer of the packages that we're talking about  
22 here. It has about 10 packages.

23   **Q.**   Which of these versions of Java is at issue in this case,  
24 Professor Astrachan?

25   **A.**   The API declarations, the label declarations that we're

1 talking about here, come from Java SE, the platform that's  
2 designed to create programs that run on desktop and laptop  
3 computers.

4 **Q.** And what specific packages are at issue in the case?

5 **A.** There are 37 packages that we're talking about here. And  
6 we can see them listed up there.

7 We don't have to go through all these packages, but these  
8 are all the package names. And you can see they start with  
9 either Java or JavaX. And then the names essentially describe  
10 what you'd expect to find in those classes -- in those  
11 packages.

12 **Q.** Now let's talk a little bit about Android. Could you  
13 explain to the jury what the Android platform is?

14 **A.** Sure.

15 We have a picture of the Android platform that I could  
16 use --

17 **MR. PAIGE:** Your Honor, may I show the board?

18 **THE COURT:** Of course.

19 **MR. PAIGE:** Exhibit 43.1 in evidence.

20 **THE WITNESS:** It would be helpful if I could go over  
21 there and point --

22 **THE COURT:** Be my guest. Just keep your voice up.

23 **THE WITNESS:** Okay.

24 **THE COURT:** Can the jury see that okay? We'll move  
25 it if you can't see.

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1 Why don't you move it closer to the jury box.

2 **THE WITNESS:** Okay.

3 **MR. PAIGE:** Certainly.

4 **THE WITNESS:** Here we go.

5 **THE COURT:** How many lawyers does it take to move an  
6 easel?

7 (Laughter)

8 **THE COURT:** Can you all see now?

9 All right. Mr. Paige, you're going to have to move back.  
10 I think you're blocking the view of some of the jurors.

11 **THE WITNESS:** Stand to the side.

12 **THE COURT:** So let's go ahead.

13 **BY MR. PAIGE**

14 **Q.** So could you explain what exists at the lowest level of  
15 the Android platform?

16 **A.** At this lowest level, we see the Linux kernel. That's the  
17 low-level operating system. And this is an open source kernel  
18 that Google used and made, kind of, special for this mobile  
19 platform. And that's what's at this lowest level.

20 **Q.** And what exists above that lowest level in the Android  
21 platform?

22 **THE COURT:** Mr. Paige, would you scoot back one more  
23 step.

24 **MR. PAIGE:** Of course.

25 **THE COURT:** There we go.

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1                   **THE WITNESS:** We can see here what's labeled the  
2 "Android runtime." And that consists of the core libraries,  
3 which are the new implementations of the packages from which  
4 these 37 API package labels come from. So those are included  
5 here, as are other libraries that are designed for this mobile  
6 platform.

7                   So these are the Java libraries, including new  
8 implementations of the 37 packages. And then new libraries  
9 that are part of creating this mobile platform. Those are part  
10 of this Android runtime.

11                  **BY MR. PAIGE**

12                  **Q.** And what are those new libraries for, Professor Astrachan?

13                  **A.** Well, these libraries would be for things like making Web  
14 browsers. Or in a smartphone, it has location awareness for  
15 GPS. That's not something that you would expect on a laptop or  
16 desktop computer, where Java SE comes from.

17                  It has accelerometers. When your phone shakes, something  
18 happens. It has a camera. Those are also features that you  
19 wouldn't expect on desktop or laptop computers.

20                  So many of those libraries are designed specifically for  
21 the mobile platform, which is a different platform from where  
22 the 37 API packages came from.

23                  **Q.** And beneath the core libraries what is that, Professor  
24 Astrachan?

25                  **A.** Well, that's labeled here the "Dalvik virtual machine."

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1 And we either have a Dalvik virtual machine or the Android  
2 runtime.

3 If you remember back from the first slide I had, where  
4 translating a programming language into the 0s and 1s used a  
5 virtual machine, this is a virtual machine designed  
6 specifically for a mobile platform.

7 It has smaller bytecodes than you'd find in the virtual  
8 machine on the Java SE platform. It's designed to run more  
9 efficiently on a mobile platform, which has battery  
10 capabilities that are different than you would find on a  
11 desktop computer. And it runs on a mobile smartphone platform  
12 that would have less memory, for example.

13 So this virtual machine is designed specifically for this  
14 Android smartphone platform.

15 **Q.** And in the green area, can you explain to the jury what  
16 that is, Professor Astrachan?

17 **A.** We can see here that those are labeled "libraries," which  
18 we know are collections of code. And in this case these are  
19 open source or public domain libraries that were written in C++  
20 or maybe Java.

21 And they are specific, again, for a mobile platform, a  
22 smartphone platform. Web.Kit, for example, is software  
23 produced by Apple that allows us to create a browser that would  
24 run on a smartphone.

25 We have Open GL embedded system. That's a graphics

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1 library that makes graphics run quickly and smoothly.

2 SQLite is a database that allows the mobile phone to  
3 access the database.

4 In general, these are libraries that are part of the  
5 mobile platform. And these are open source libraries that are  
6 integrated with the core libraries as part of creating the  
7 Android platform.

8 Q. If a developer wanted to create an application, how would  
9 a developer do that on the Android platform.

10 A. Top level applications, that is where a developer would  
11 create an application, like a contact list or a phone screen  
12 that you see over here over here. Those applications, which  
13 are largely written in Java or they can be written in C++ or  
14 C -- those applications take advantage of an application  
15 framework, which is a set of services kind of provided by the  
16 Runtime in these other libraries.

17 So the key here is that the applications are written at  
18 this high level and it makes use of all the libraries here and  
19 then we heard how those also depend on the Linux kernel down  
20 below.

21 Q. Thank you, Professor Astrachan.

22 Now, I believe you had mentioned that the -- the  
23 applications could be written in Java or C++. How would one  
24 write an application in C++ for Android?

25 A. Well, an application written in C++ on Android would use

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1 what is called the NDK. That's a library instead of code that  
2 Android provides to use C++ in creating software that would  
3 also run in the Android platform.

4 **Q.** How is the Android platform distributed?

5 **A.** The Android platform is distributed as an open source  
6 platform. So that means the source code is free for anyone to  
7 use.

8 **Q.** Now is the Android platform compatible or intraoperative  
9 with the Java SE platform?

10 **A.** No, it's not. We talked about how the Java SE is designed  
11 for laptop and desktop computers, and an application written  
12 for those would use likely the 37 API packages and their  
13 implementations, but maybe the hundred-plus more that were  
14 there for a desktop or laptop computer.

15 So if it used all those API packages, the declaring code  
16 and implementing code to run on a desktop or laptop, we  
17 wouldn't expect it to run on a mobile device because it  
18 wouldn't use all those API packages.

19 And similarly, if we wrote an application that ran an  
20 Android, it would -- it might use some of those 37 independent  
21 implementations in the packages, but it might use the  
22 accelerometer and the location services, and if it used those,  
23 those new libraries that were designed specifically for the  
24 Android platform, it wouldn't work on your desktop or laptop  
25 computer. So in general, those platforms aren't compatible.

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1       **Q.**    Was it necessary for Google -- was Google required to  
2 replicate the API labels in SSO of the 37 Java SE API packages  
3 in order to use the Java programming language?

4       **A.**    I understand that Oracle has said that roughly 60 classes  
5 in 3 packages are constrained --

6               **MS. HURST:** Your Honor, I'm going to object. This is  
7 beyond the scope of the witness' opening report.

8               **THE COURT:** Is that true?

9               **MR. PAIGE:** It is, Your Honor.

10          **THE COURT:** Sustained.

11          **MR. PAIGE:** It's required by your motion in limine.

12          **THE COURT:** What?

13               **MR. PAIGE:** This is -- this testimony was required by  
14 your motion in limine. I'm happy not to put it in --

15               **MS. HURST:** But not in the opening, Your Honor.

16               **THE COURT:** Well, I apologize for not having -- I just  
17 have to count on counsel to do it the way I said before. Can  
18 you skip this for now?

19               **MR. PAIGE:** I can, Your Honor.

20               **THE COURT:** Are you saying I ordered you to take this  
21 up on direct?

22               **MR. PAIGE:** You ordered that he save it, so I'm happy  
23 to move on if you don't --

24               **THE COURT:** Let's come back to it.

25               **MR. PAIGE:** Very good, Your Honor.

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1       **Q.** Professor Astrachan, what might happen if you use  
2 different method declarations for classes in a given package?

3       **A.** Well, I talked before about how if the method declarations  
4 changed, then software that had already been written would no  
5 longer work, but if the method declarations changed, that  
6 wouldn't meet developer expectations, and so developers  
7 wouldn't be able to be effective in using these packages if the  
8 label declarations were all different than what they expected  
9 and had knew from what was -- their development with Java.

10      **Q.** What would the programmer need to do if the method  
11 declarations were to change?

12      **A.** Well, if the method declarations changed, the programmer  
13 would have to learn the new labels by consulting documentation  
14 and reading books, and software that had already been written  
15 would have to be rewritten to use these new API declarations.

16      **Q.** Okay. Professor Astrachan, you had given an overview of  
17 your opinions earlier. I would now like to discuss some  
18 details in your opinions.

19           Based on the work you've done, what opinions do you have  
20 with respect to the way Google has used the API labels of these  
21 37 packages in Android?

22      **A.** Can I use the diagram again?

23      **Q.** Of course.

24           Your Honor, may he approach the easel?

25           **THE COURT:** Yes, of course.

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1                   **THE WITNESS:** I'm going to just kind of describe at a  
2 high level what happened here.

3                   We talked about these core libraries. The first thing  
4 Google did was they selected just the 37 packages and then you  
5 used the labels from these 37 packages in creating the Android  
6 platform.

7                   **BY MR. PAIGE:**

8                   **Q.** How many packages did they select those 37 from?

9                   **A.** Those 37 packages were from selected from 166 packages  
10 that are part of Java SE, so the ones that were selected were  
11 the ones that would be useful to use on this mobile platform.  
12 And then after selecting those 37 packages, they then  
13 implemented them with new source code that was optimized for  
14 the mobile platform.

15                  So because they only took the label declarations, they  
16 then had to create new implementations, again optimized for a  
17 mobile platform. That was part of how they used these  
18 declarations in creating Android.

19                  And then once they implemented these 37, they had to add  
20 new libraries -- I talked about this before -- so the new  
21 libraries that would be part of the mobile Android platform.  
22 So after selecting the 37 and then implementing them, they  
23 developed new libraries that were integrated with these as part  
24 of creating the platform.

25                  **Q.** And what did implementing, putting the new implementing

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1 code in do for the platform?

2 **A.** This created a new context for these other labels to be  
3 used because now they're part of a mobile smartphone platform  
4 that's different from the desktop and laptop platform that  
5 these 37 labels had been used before.

6 So in selecting them and then re-implementing them for  
7 mobile and then developing the new libraries, we see that these  
8 are used in the new context, a different context than they had  
9 been used before.

10 **Q.** When you say they develop new implementations, how was  
11 that tuned for mobile, if at all?

12 **A.** The new implications of these 37 packages are about 80  
13 percent the size of the libraries that were implemented for  
14 Java SE, so we've seen that those new implementations are a  
15 smaller amount of source code than they were on the Java SE  
16 platform.

17 **Q.** The new Java library, what was the point of putting those  
18 in?

19 **A.** These new Java libraries, as I mentioned, are needed to  
20 access the functionality and purpose of this new context in  
21 which the labels are used: Cameras, accelerometers, location  
22 services. These new libraries allow these labels to be used in  
23 this new context.

24 **Q.** So in addition to the new libraries, what did Android add?

25 **A.** Well, I talked before and we can see down here that there

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1       is this Dalvik Virtual machine. Adding that to these helped  
2       make the whole platform work because this virtual machine was  
3       optimized again for a smartphone platform.

4           So by selecting the 37, making new implementations,  
5       developing new libraries, and then creating this new Dalvik  
6       Virtual machine, the Google engineers were able to use those  
7       declarations in this new context on the smartphone platform.

8       **Q.**     How was Dalvik optimized for mobile?

9       **A.**     Dalvik is optimized for mobile by first using smaller  
10      bytecodes than are used in the Java Virtual machine, and it's  
11      also designed to take advantage, as I mentioned earlier, of  
12      power constraints and memory constraints that are different on  
13      a smartphone platform than they are on a desktop or laptop.

14       **Q.**     What else was added to the 37 labels?

15       **A.**     Well, finally at the bottom level -- and I'm not going to  
16      get down to the floor to point. I'll just reference that it's  
17      down there in red -- we see the Linux kernel, and that Linux  
18      kernel is the low-level operating system that Google used  
19      because it's an open source operating system and then  
20      specialized for use on the smartphone handset.

21           So that's the lowest level of what Google did in creating  
22      this new context in which those 37 labels were used. So we can  
23      see that all these features went into creating the new context  
24      that shows how those 37 labels -- they're 37 packages, labels  
25      from them, were used in this new context.

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1   **Q.** And does the green layer enter into the context as well,  
2 Professor Astrachan?

3   **A.** Well, that green layer is kind of part of these new  
4 libraries, so some of these libraries were written in Java and  
5 some of the libraries were open source libraries that were  
6 incorporated into that section.

7   **Q.** And how, if at all, did those serve to create a new  
8 context for the 37 Java APIs?

9   **A.** Again, since we have the re-implementation, the new  
10 libraries that allowed the smartphone to function, things like  
11 a media framework and the secure sockets layer and the web kit,  
12 those hadn't been incorporated before with these 37 packages to  
13 create this smartphone platform.

14   **Q.** Thank you, Professor Astrachan.

15   **A.** You're welcome.

16   **Q.** So could you explain to the jury how, if at all, the ways  
17 in which this whole Android platform has been used affect your  
18 opinion regarding the nature of Google's use of these APIs?

19   **A.** Yes. As I mentioned, in selecting all of these and then  
20 creating a smartphone platform and releasing it as open source,  
21 Google has created new opportunities. I can show on the screen  
22 here one of my independent -- one of my exhibits that says the  
23 Kindle Fire, which is both hardware and an operating system  
24 that Amazon has developed, that's based on Android, but not the  
25 same as Android, **so because Android is released as open source,**

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1   Amazon was able to use it and develop Kindle Fire, which is  
2   both a device and an operating system that Amazon releases that  
3   doesn't work the same way as Android does but is built on  
4   Android.

5           On the right, we see a handset created by Wileyfox, which  
6   is a handset manufacturer in the UK that runs Cyanogen, which  
7   is -- the CyanogenMod is an operating system, again built on  
8   Android because it's open source, but different with different  
9   functionality. Because Android is open source, the Cyanogen  
10   Company can take that and do what they want. So here are two  
11   examples that show how the open source nature of Android has  
12   created opportunities for companies to use that.

13   **Q.**   How, if at all, do past attempts by Sun to create a  
14   smartphone platform figure into your opinion about Google's use  
15   of the 37 APIs?

16   **A.**   We know that Sun had the 37 packages and their labels and  
17   their implementation, along with 100 other packages. Those  
18   were part of Sun's Java software product, and Sun was not able  
19   to use those to create a smartphone.

20   **Q.**   To what extent, if at all, do Oracle's statements  
21   regarding Android enter into your opinions regarding Google's  
22   use of the Java APIs?

23   **A.**   Well, we just saw a video right before here of Terrence  
24   Barr saying that Android was transformative, and in my opinion,  
25   that's true. The Android platform is a transformative use of

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1 these package labels from the 37 APIs.

2 **MS. HURST:** Your Honor, that was covered by the MIL,  
3 and that's a specific legal definition.

4 **THE COURT:** Well, you are talking about Mr. Barr? Is  
5 that the motion in limine you're referring to?

6 **MS. HURST:** Actually, the motion in limine for  
7 Dr. Astrachan also had limitations on his ability to  
8 characterize things as transformative, Your Honor.

9 **MR. PAIGE:** I don't think that is correct, Your Honor.

10 **THE COURT:** I honestly don't remember. We will have  
11 to take this one up at the break. So let's strike that answer  
12 for the time being. We will come back to it after the next  
13 break. Okay. Go ahead.

14 **BY MR. PAIGE:**

15 **Q.** Professor Astrachan, based on the work that you've done,  
16 have you formed any opinions about the nature of the material  
17 that Google has used from the 37 APIs?

18 **A.** Yes. I talked earlier in my kind of summary that the  
19 label declarations are functional because they connect the  
20 developer software with the software in the library, the  
21 implementing code.

22 So these API labels are very functional in nature. And  
23 the labels themselves are also descriptive and functional of  
24 their purpose because that allows developers to be able to use  
25 them more effectively.

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1   **Q.** And so do you have any opinions about what the names  
2   themselves of the API are in terms of their nature?

3   **A.** Sure. I can -- I can show you some of the names.  
4   Certainly not all of the label declarations, but I've got a  
5   slide, it's in my slide 9, that shows some of these.

6           We can look at this slide first. This is a slide that  
7   shows the package names, and we can see that the packages are  
8   very descriptive of their purpose. So, for example -- and all  
9   packages start with Java or Java X. Net is a collection of  
10   network classes. IO is a collection of input/output, which are  
11   called IO by programmers.

12           SEQUEL or SQL is a structured query language, and in that  
13   package, we'd find the classes to access database programs  
14   using SEQUEL.

15           Security is very important in programming today. When  
16   your program accesses your bank, for example, you want to be  
17   sure that it's a secure transaction. And in the security  
18   package, we'd find the classes that are related to security.

19           Java.util is a collection of utility classes that  
20   programmers use to connect different pieces of software. So  
21   here we see that the package names are highly descriptive of  
22   what their purpose is.

23           And then on the next slide, we see some method and class  
24   names.

25   **Q.** Being descriptive of their purpose, what does that mean

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1 about the nature of these names?

2 **A.** The names, as I mentioned, are both descriptive and  
3 functional in describing what they do.

4 **Q.** So you would say you're going to look at some method and  
5 class names. Could you explain to the jury what these tell you  
6 about the functionality of what Google has used?

7 **A.** As it turns out, in Java, methods are supposed to start  
8 with a lower case letter. So on that graphic, you see two  
9 methods that are in lower case letters, that's the top. That's  
10 get date and time. And it's probably reasonable to think that  
11 that method gets the date and time.

12 And then the method set date and time would allow you, the  
13 programmer, to set the date and time that are used when you  
14 write programs. So those method names, although they're not  
15 short, are highly functionally descriptive of what their  
16 purpose is.

17 **Q.** Have you looked into how many such get and set methods  
18 there are in Java?

19 **A.** Yes. There are thousands of get and set methods in Java.  
20 Get and set is a reasonably common convention used in  
21 programming to get and set different properties in a class, so  
22 there are thousands of them in these 37 API packages.

23 **Q.** How about the rest of those classes on your slide?

24 **A.** Class names in Java start with capital letters, and we can  
25 see here that the class names are also descriptive of their

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1 purpose and function. So events are things that occur in  
2 programming that you connect one part of your program to  
3 another. And there we see preference change event and connect  
4 event.

5 For example, if a user changes their preferences in a  
6 phone or piece of software, there might be a preference change  
7 event. And then a connect event would be connecting one event  
8 with something else.

9 We see three input streams. A stream is a way for  
10 information to flow into your program. Well, an input stream  
11 has information flowing in, and that could come from a file or  
12 from a zip file, that's a zip -- a compressed collection, or  
13 from an object. So we see here that these class names are also  
14 related and similar to each other in describing their function  
15 and purpose for a programmer.

16 Q. Again, how are these names used in Java or Android?

17 A. Well, the method declarations require that we have a  
18 package name and a class name and a method name. So  
19 programmers would use these class names in writing the programs  
20 that they need to run on an Android platform, for example.

21 Q. When they wrote that class name, what would then happen?

22 THE COURT: You're saying wrote it in the particular  
23 program that they themselves are writing, or do you mean when  
24 it's written as part of the library?

25

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1 BY MR. PAIGE:

2 Q. Sure. When someone writes that name into a program they  
3 themselves are writing and compile it, what does that name then  
4 do?

5 A. You write the class name and the method name in the  
6 program that I'm writing over here, and that would then  
7 complied into this bytecode that runs as 0s and 1s, and it  
8 would access the implementing code in the library. So as the  
9 developer of the application, I use the package class and  
10 method name to connect my software with the implementing code  
11 that's in the package.

12 Q. So what function does that name serve?

13 A. That name serves the function of connecting my software  
14 with the implementing code in the library.

15 Q. Based on your knowledge of programming languages, what  
16 similarities, if any, exist between the names used in Java and  
17 the names used in other programming languages?

18 A. Well, we've heard here last week, and I know from my  
19 experience teaching, that Java uses many names that are similar  
20 in, say, C++ and C. So that's part of what makes learning a  
21 new programming language more straightforward because we expect  
22 to see the same names in one language in the libraries that are  
23 associated with that language used in another language.

24 Q. Based on the work that you've done is it important that  
25 names for APIs be creative?

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1     **A.** No. We wouldn't want names to be creative because as  
2 software developers, we'd expect to have the names in our  
3 programming libraries be descriptive and functional of their  
4 purpose. So we would want square root, for example, to mean  
5 find the square root, not some complicated, long name that  
6 wouldn't be indicative of its function and purpose.

7                 So creative names wouldn't be helpful for a developer in  
8 finding and accessing the functionality that we'd expect to  
9 find in libraries.

10    **Q.** Professor Astrachan, as part of your work in this case,  
11 did you analyze amount of material that Google used from  
12 Java SE?

13    **A.** I did. I wrote software to analyze both the Java SE  
14 platform and the Android platform.

15    **Q.** And how many lines did you understand have been used by  
16 Google from Java SE?

17    **A.** I talked about the method and class declarations that were  
18 selected in creating Android, and there are about 11,500  
19 declaring lines of code that were selected in creating the  
20 Android platform.

21    **Q.** Did you quantify how that Java SE material compared to the  
22 amount of source code in Java SE?

23    **A.** If we look at Java SE and the 166 Java packages that are  
24 part of Java SE, we see that in those 166 packages, there are  
25 about 2.86 million lines of code. So the 11,500 that were

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1 selected, that's about .4 percent of the implementing code for  
2 all 166 packages, and if you look at all of Java SE, that's  
3 about five million lines of code.

4 Q. How many lines are code are there of the Android platform  
5 generally?

6 A. The software I wrote indicates that there are about 15  
7 million lines of code in the Android platform.

8 Q. Professor Astrachan, based on the work you've done, have  
9 you formed any opinions about the effect that the release of  
10 Android has had on Java?

11 A. Yes. As I mentioned earlier, Java is the number one  
12 programming language in use. That's what I know from my own  
13 work and what we see on Oracle's website. So I think that's a  
14 good indication of part of the development environment we see  
15 today.

16 Q. And what is part of that development environment that has  
17 Java still remaining number one?

18 A. We have the Android platform so that programmers can  
19 develop in Java for the Android platform, and we have the  
20 Java SE platform so programmers can continue to develop with  
21 Java for that desktop and laptop platform as well.

22 Q. What is OpenJDK?

23 A. OpenJDK is an open source implementation of Java SE that  
24 Sun Oracle has released.

25 Q. And how did it release the OpenJDK?

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1     **A.**   The OpenJDK is released with a GNU version -- GPL Version  
2     2.0 with GNU Classpath license. That's a specific open source  
3     license, the one that's used in the OpenJDK.

4     **Q.**   And you mentioned the Classpath exception. What does that  
5     allow a user to do?

6     **A.**   The Classpath exception allows a user to develop their own  
7     program and release that program with a different license, if  
8     that's what they want. It's what's called a linking exception.

9     **Q.**   What is linking as a technical matter?

10    **A.**   Well, I've talked all along about how the libraries are  
11    the implementing code and how developers use the API  
12    declarations to access the functionality of the implementing  
13    code.

14       So here I am the developer, writing my software, and I use  
15    the declaration. Now I compile my program into bytecode and I  
16    want it to run, but it needs that library to run because I just  
17    used the method declaration, and for it to work, I need the  
18    libraries that it's accessing. So those libraries are also  
19    compiled to bytecode.

20       So here's my program and here's the library and I need to  
21    combine them. The process of combining these two different  
22    bytecode programs together, that's linking. They're linked  
23    together to create the application that will run an Android  
24    platform.

25    **Q.**   And what form are those programs in at the time they're

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1 linked?

2 **A.** Well, as I just discussed, you take your source code,  
3 compile it down into bytecode or 0s and 1s, object code. Same  
4 things with my libraries. I compile those down into bytecode  
5 or 0s and 1s and then I link those low-level 0s and 1s or  
6 bytecodes programs together. So the linking occurs at the low  
7 level.

8 **Q.** How many of the 37 Java API labels, package labels, does  
9 OpenJDK contain?

10 **A.** OpenJDK contains all of the API declarations that we're  
11 talking about here. All of them are part of OpenJDK.

12 **Q.** How do you know that?

13 **A.** I wrote software that looked at those method declarations  
14 and saw that they were in OpenJDK.

15 **Q.** How can those persons or companies that choose to adopt  
16 the OpenJDK use those 37 Java API packages labels?

17 **A.** Well, I mentioned that OpenJDK is released with a GPL 2.0  
18 with Classpath exception license, and because of that,  
19 companies and users of OpenJDK are able to use those 37 API  
20 package labels in all of OpenJDK, essentially in any way they  
21 wish.

22 And we can see on my demonstrative part of an FAQ that  
23 comes with OpenJDK, and the question here is, "Can someone  
24 create and distribute an implementation that isn't compatible  
25 with a Java specification using this code," and this code here

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1 is the OpenJDK that includes the 37 API pack labels.

2 And the answer to this question is, "Yes. We do not  
3 recommend or endorse that action, however. In addition, they  
4 cannot label that implementation with Java compatible or Java  
5 powered for Java ME brand and logo. These brands are your  
6 assurance that an implementation has passed the relevant TCKs."

7 So this shows how, because of the GPL Version 2.0 with  
8 Classpath license, that anyone can take the OpenJDK and add to  
9 it or take from it just pieces. That's what this FAQ is  
10 saying.

11 **Q.** You mentioned this is an FAQ. What is an FAQ?

12 **A.** That's a frequently-asked-questions document. That's  
13 typically put on the web or distributed in other ways to help  
14 developers or companies or users understand something about how  
15 this OpenJDK product is distributed.

16 **Q.** And who wrote this FAQ?

17 **A.** This is part of the OpenJDK release. That would be  
18 Oracle, which distributes OpenJDK.

19 **Q.** How much does Oracle charge for use of its method  
20 declarations in the OpenJDK?

21 **A.** Nothing, because OpenJDK is distributed with this open  
22 source GPL Version 2.0 license, so there is no charge to use  
23 any parts of OpenJDK. It's free.

24 **Q.** Can you use as much or little of the OpenJDK as you'd  
25 like?

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1     **A.** Yes. As I mentioned, that's what this question and answer  
2     in the FAQ indicates. All of OpenJDK is free so you can use  
3     just some pieces of it or you can add to it. It's all free.

4     **Q.** Professor Astrachan, can you explain to the jury what it  
5     means to independently implement APIs?

6     **A.** Well, we've heard that phrase, and for the purposes of  
7     this explanation, we'll start with the labels from these 37  
8     packages. And we know that, for example, Sun implemented them.

9     And we've seen that there are other independent  
10    implementations, meaning you start from just the API method  
11    declarations and some specifications or comments about how they  
12    work and you create your own implementation without looking at  
13    the other one. What makes them independent is that this  
14    implementation is created without looking at the other  
15    implementing code, just looking at the method declarations and  
16    the specification for how they work.

17    **Q.** How common is it to create independent implementations of  
18    APIs?

19    **A.** Well, we've seen and heard about both the GNU Classpath  
20    implementation of Java SE and the Apache Harmony implementation  
21    of Java SE. Those are two independent implementations of  
22    Java SE.

23    **Q.** Are there independent implementations of other computer  
24    languages?

25    **A.** Of other libraries, we have independent implementations.

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1 For example, the C++ libraries, there are LLVM, which is from  
2 University of Illinois and GNU software Foundation and Boost  
3 and IBM. All of those groups have created independent  
4 implementations of the C++ standard libraries.

5 **Q.** You mentioned GNU Classpath. What was GNU Classpath?

6 **A.** GNU Classpath was an independent implementation of Java SE  
7 developed by the GNU Software Foundation.

8 **Q.** And you also mentioned Apache Harmony. What is Apache  
9 Harmony?

10 **A.** Apache Harmony is an independent implementation of Java SE  
11 that was developed by the nonprofit Apache Foundation. Both  
12 the GNU Software Foundation and Apache are nonprofit  
13 foundations.

14 **Q.** To what extent, if at all, is the existence of Apache  
15 Harmony relevant to your opinions in this case?

16 **A.** Well, Apache Harmony and the other independent  
17 implementations help me understand that in general, it was very  
18 common to have independent implementations. That kind of  
19 demonstrates that it would be expected and reasonable for those  
20 things to happen.

21 **Q.** Are you aware of any examples of independent  
22 implementations of APIs by Sun?

23 **A.** Sun created Open and StarOffice, which are their own  
24 office suite of applications, kind of like Excel and Word that  
25 you might see from Microsoft. And in the OpenOffice

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1 implementation of the spreadsheet program, that uses the same  
2 functions, which are APIs, that are found in VisiCalc, one the  
3 first spreadsheet programs from the early '80s.

4 So functions that we see in VisiCalc for spreadsheet  
5 operations that are also part of Microsoft Excel continue to be  
6 used in StarOffice so that a spreadsheet application can run on  
7 any of those platforms using the same names and the same APIs.

8 **Q.** Are you aware of any other examples of Sun independently  
9 implementing the names of APIs?

10 **A.** Sun also has or had Solaris, an operating system that they  
11 distributed and marketed, and Solaris is a UNIX-based system.  
12 I used it when I was a graduate student. And it included some  
13 APIs from Linux, a different operating system. So those same  
14 APIs that were part of Linux were reimplemented and used as  
15 part of the Solaris operating system so that users of Solaris  
16 would be able to make the same use of those Linux APIs.

17 **Q.** Are you aware of Oracle engaging in any independent  
18 implementations of APIs?

19 **A.** Oracle distributes database products, and those database  
20 products today use SQL. I mentioned that earlier, the  
21 structured query language. SQL was something that IBM released  
22 in the mid to late '60s as part of System R. So those same  
23 APIs that are part of SQL continue to be used in database  
24 products today like the one that Oracle markets.

25 **Q.** And how, if at all, do these independent implementations

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1 support your opinions in this case?

2 **A.** All these independent implementations of APIs, from  
3 spreadsheets to databases to independent implementations of  
4 Java SE, show that it's reasonable to expect that these  
5 independent implementations was something that was common.

6 **Q.** And I would like you now to please summarize the opinions  
7 you developed in the case for the jury, if you could?

8 **A.** I can, and I have one final graphic that explains this.

9           **THE COURT:** I am going to interrupt for a minute. I'm  
10 going to let you finish this answer, but we are going to take a  
11 break after this answer. All right. Sorry. Go ahead.

12           **THE WITNESS:** In selecting the 37 API packages and the  
13 method declarations from them, Google created a new context for  
14 those to be used, the new Android mobile smartphone platform.  
15 That's a completely different context than these have been used  
16 before.

17           The labels themselves are these functional descriptions.  
18 I've got one example here, java.lang.math.max. That's the  
19 package, class, and method name. So these method names are  
20 very functional and descriptive of their purpose.

21           A very, very small amount of Java SE was used. The 11,500  
22 out of 2.86 or 5 million lines is a very small percentage. And  
23 we see that Java is the world's number one programming language  
24 today, in part because of Android. And all 37 API package  
25 labels and their implementing code are released as part of

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1 OpenJDK.

2       So in looking at the use of them in creating Android, in  
3 the nature of what was used, in the amount of Java SE that was  
4 used and how Java is continued to be used today, I think that  
5 all together, these point to Google's use being a fair use.

6       **THE COURT:** We are going to take a 15-minute break.

7 Please remember the admonition. See you back here then.

8                     (Proceedings were heard out of presence of the jury:)

9        **THE COURT:** We might need the witness here. Help me  
10 understand the issue on theses things that we didn't get into.

11       **MS. HURST:** Well, Your Honor, with respect to that  
12 last bit of testimony we have a problem because the Court  
13 ordered in the Cattell order, Docket 1879, that examples that  
14 do not specify whether re-implementations were done without  
15 permission or regard for whether or not a license existed  
16 should not be used.

17       And we just heard a long litany of supposed, you know,  
18 custom of reasonable re-implementation without one single  
19 mention that those were unlicensed. And it's not in the  
20 witness' report anywhere that those were unlicensed. And so  
21 all of that testimony should be stricken, Your Honor. That was  
22 already addressed in the Court's Cattell order.

23       **THE COURT:** But that was in the Cattell order. This  
24 is not Cattell.

25       **MS. HURST:** But it's the same issue, Your Honor.

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1           **THE COURT:** Well --

2           **MR. PAIGE:** There was no motion on this in the  
3 Astrachan motion in limine, Your Honor. I have the order in  
4 front of me. It was in his report, many paragraphs.

5           **THE COURT:** I'm going to let you cross-examine on  
6 that. I'm not going to -- it's a good point. I wish I had  
7 known then what I know now, but it's something that can be  
8 cured with cross-examination.

9           But you have raised two other points.

10          **MS. HURST:** One other point was that the Court's order  
11 said that he was not allowed to characterize this as  
12 transformative. That was in docket --

13          **THE COURT:** My law clerk has failed to give me the  
14 order. I need a copy of the order.

15          **MR. PAIGE:** I have it right here. It says "not  
16 permitted to offer testimony regarding his understanding of the  
17 law; i.e., that transformativeness means opening new horizons.  
18 Nevertheless, he may testify to his belief that Android opened  
19 new horizons which could help the jury in assessing  
20 transformativeness." There is nothing in his testimony that  
21 said this is the law.

22          **MS. HURST:** Well, new horizons was fine, Your Honor.  
23 I didn't object to that. It was not until he said it was  
24 transformative. That was the problem. Because that's equating  
25 what's happened with the Court's legal standard. It's also

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1 equating what Mr. Barr's testimony was with the legal standard,  
2 and the Court has already ruled also that that didn't meet the  
3 legal standard.

4           **THE COURT:** I thought he did say it. I heard it on  
5 the screen myself. He did use the word "transformative" on the  
6 screen.

7           **MS. HURST:** He used it to say, Your Honor, that it  
8 transformed the smartphone market. That's not the definition  
9 of "transformative" under the first factor, which is exactly  
10 why the Court ordered the other day that if that Barr testimony  
11 was going to be played, all the lead-up would have to be  
12 included. "I don't know what you mean", "what is the  
13 definition of that term." And then there would be, you know --  
14 it would be clear that they were not employing the definition  
15 that the Court is instructing the jury to use, which has many  
16 aspects to it, including the distinctness of purpose  
17 requirement, not superseding the market for the original, and  
18 all that other stuff that's in the Court's proposed -- the  
19 instruction.

20           **THE COURT:** Can I see what -- the order that I wrote?

21           **MS. HURST:** Yes, Your Honor.

22           **THE COURT:** Where do I look?

23           **MS. HURST:** I think it's page 4, Your Honor. That  
24 discusses the ins and outs of transformative. Bottom of page  
25 3. If would look at page 4, Your Honor, lines 15 through 20

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1 and 21 through 25. He is allowed to say "new horizons," but  
2 not "transformativeness." That's the way we understood the  
3 order, Your Honor.

4 **MR. PAIGE:** And we understood it to say he shouldn't  
5 offer legal testimony, Your Honor, which he hasn't.

6 **THE COURT:** All right. What I'm going to do is  
7 tell -- I'm going to let the testimony stand, but say that the  
8 witness is not qualified -- that the word "transformative" is  
9 a -- both a legal term and an English word. And he is not  
10 qualified to tell us the legal meaning.

11 So the jury must take his use of "transformative" in more  
12 limited sense of English word, and I will -- I have instructed  
13 on meaning of "transformative."

14 I just can't tell people not to use English words.  
15 "Transformative" is an English word.

16 **MS. HURST:** Totally solves the problem. Thank you,  
17 Your Honor.

18 **THE COURT:** That's what I'm going to do.

19 What was the thing about the 62 now?

20 **MS. HURST:** That's not in the opening report,  
21 Your Honor, and the Court ordered that if there was going to be  
22 testimony about constraints, it had to be offered in a  
23 particular way. But we still maintain our objection that  
24 things that are not in the opening report should not be  
25 presented at this time.

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1           **MR. PAIGE:** So, Your Honor, Your Honor did say  
2 Professor Astrachan must clearly state --

3           **THE COURT:** Where did I say that?

4           **MR. PAIGE:** This is on page 6 of your Astrachan  
5 motion, Your Honor. Docket 1738.

6           **THE COURT:** Is that what I'm already looking at?

7           **MR. PAIGE:** Lines 21 through 25.

8           **THE COURT:** Just a minute. Well, how did I get off  
9 into this anyway if it's not in his report?

10          **MR. PAIGE:** Well, Your Honor --

11          **THE COURT:** Is it --

12          **MS. HURST:** It's in his rebuttal reports, Your Honor.

13          **MR. PAIGE:** That's not really true. Paragraph 164 of  
14 his opening report he does talk about Dr. Reinhold's concession  
15 at the last trial, that 61 classes were necessary to use the  
16 programming language.

17          Now, a few months ago, Oracle revised their position and  
18 submitted the new thing saying that in fact, it's 62, and it  
19 isn't even all of these classes. It's just little parts and  
20 pieces and snippets of these classes.

21          And then they turned around and said since we have now  
22 conceded that, everyone agrees that this is what is needed.  
23 And that all happened in February -- February 29 is when they  
24 put this new interpretation out retracting Dr.--

25          **THE COURT:** Let me hear from the witness. If you are

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1 allowed to answer this question, what are you going to say?

2           **THE WITNESS:** My understanding is that Oracle has said  
3 that roughly 60 classes from three API packages are constrained  
4 by the Java programming language and thus are technically  
5 necessary as part of implementing the Java programming  
6 language.

7           **THE COURT:** You are just basing that on what Oracle  
8 has said.

9           **THE WITNESS:** But I'm also going to add that  
10 developers would expect to be able to make effective use of the  
11 programming language that more would be there.

12          **THE COURT:** Well, I don't like testimony where -- what  
13 I just heard, where the witness is throwing back something that  
14 Oracle said. No. There's too much lawyer-like -- no.

15          So if it comes up on cross-examination or the door is  
16 opened on cross, then you can get back into that.

17          But I want to say, I do think we should clarify for the  
18 jury this 62 thing. And I am a little irritated that you  
19 lawyers are not coming to grips with that, but I think we  
20 should clarify that for the jury, but we're not going to do it  
21 the way this witness has just suggested.

22          **MS. HURST:** We have been trying to get a stipulation  
23 since the Court ordered us to this morning. I will check in on  
24 the progress of that, Your Honor.

25          **MR. VAN NEST:** I can report that we have one --

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1           **MS. HURST:** Not until I read it.

2           **MR. VAN NEST:** Well, you can read it, but it's been  
3 approved by both sides.

4           **THE COURT:** You can give it to me later.

5           **MR. PAIGE:** If I may --

6           **THE COURT:** What's the problem now?

7           **MR. PAIGE:** To circle back for a second to the first  
8 thing Ms. Hurst had spoken about.

9           She said ancient APIs, the old APIs, shouldn't come in,  
10 and in fact, in your OpenJDK order, on May 5th, you said "So  
11 for now, Oracle's motion on ancient APIs and custom evidence is  
12 denied." So they moved to keep these APIs out. You denied  
13 that motion. I'm not sure what the Cattell motion has to do --

14           **THE COURT:** Well, the Cattell thing -- see, it came up  
15 in two different ways. I'm not going to say ancient APIs.  
16 That's just an argumentative term anyway, "ancient." It just  
17 means anything that Oracle or Sun did is ancient now. That  
18 doesn't work that way.

19           But it wasn't pitched to me in the -- whether or not there  
20 was a license or not. So if there was a license, then that  
21 reduces the probative value, and so some of this has gotten in  
22 anyway. Or if it was done without regard to whether or not  
23 there was a license, that would be of some probative value, but  
24 this witness on what he's just said a while ago didn't make any  
25 of those qualifications. Nevertheless, I'm not going to strike

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1 that testimony. However, Ms. Hurst can examine on that.

2 **MS. HURST:** Thank you, Your Honor.

3 **THE COURT:** We are going to take 12 minutes.

4 (Recess taken at 11:24 a.m.)

5 (Recess taken at 11:35 a.m.)

6 (Proceedings were heard out of presence of the jury:)

7 **THE COURT:** Do you want to hand up to me the 62  
8 stipulation.

9 **MS. HURST:** We need a little more time.

10 Unfortunately, none of our team at the table had seen it yet so  
11 we are still working on it.

12 **THE COURT:** All right. Let's bring in the jury. How  
13 close are we to the end of your --

14 **MR. PAIGE:** Just one more question with regard to what  
15 Your Honor had spoken about, and then I will mark this and we  
16 are done.

17 **THE COURT:** Is this your last witness?

18 **MR. VAN NEST:** We have to offer some exhibits into  
19 evidence, but that's it.

20 **THE COURT:** So we are going to start your case.

21 Who is your first witness?

22 **MS. HURST:** Safra Catz, Your Honor.

23 (Proceedings were heard in the presence of the jury:)

24 **THE COURT:** I need to give you an admonition over  
25 there in the jury box. Okay. So our witness, Dr. Astrachan,

1 used the word "transformative" in his testimony, and I'm going  
2 to give you a qualification to that.

3 You will remember when I read to you that instruction at  
4 the outset about fair use, one of the considerations concerned  
5 transformativeness; right? Do you remember that term? And I  
6 then gave you a paragraph explaining what that term means under  
7 the law.

8 All right. So that's fine. But in addition,  
9 transformative is maybe not an ordinary, but at least it's an  
10 English word, right, and so the witness is entitled to use the  
11 word in his testimony.

12 But what I have to tell you is that his use of the word as  
13 an ordinary English word, okay, good for him. However, he is  
14 not qualified to tell you what it means under the law, and I  
15 have given you a very specific definition, and when you go to  
16 deliberate, I will give you -- repeat it, and the jury  
17 instructions, a very specific definition of what the term  
18 "transformativeness" means.

19 So it's okay that the witness used the term, but you need  
20 to put an asterisk by that word and remember what I told you is  
21 the definition of that term is what counts for purposes of your  
22 deliberations.

23 We are almost done, I'm told, with the direct examination.

24 Mr. Paige, you have a few more questions; right?

25 **MR. PAIGE:** I do, Your Honor.

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1           **THE COURT:** Please continue.

2           **BY MR. PAIGE:**

3       **Q.** Professor Astrachan, do you have an opinion about what  
4       developers would expect in terms of the Java API packages  
5       availability?

6       **A.** I do. I think developers, just like my students, would  
7       expect that if you're going to be using the Java programming  
8       language, that you have access to a rich suite of APIs, both  
9       the declarations and the libraries, to be able to write the  
10      programs that you would be writing for whatever platform that  
11      would be.

12      **Q.** What does that mean for the ability to make effective use  
13      of the language?

14      **A.** In general, programs do complicated things. They might  
15      open a web page or print something or connect with a user in a  
16      touch screen. All those things require libraries because  
17      developers couldn't do them from scratch.

18           So the effective use would be depending on the purpose of  
19       your program to write it effectively I need libraries to be  
20       able to use the language.

21      **Q.** How do that relate to the selection of the 37 out of the  
22      166?

23      **A.** I spoke earlier about selecting the 37 packages and using  
24      just those label declarations, and in incorporating that into  
25      the Android mobile smartphone platform, we saw that developers

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1 would expect to see both the implementations of those 37  
2 packages and the other libraries that I spoke of to be able to  
3 make applications for that platform.

4 **Q.** Thank you, Professor Astrachan.

5 May we mark as his demonstrative as Exhibit 7793,  
6 Your Honor.

7 **THE COURT:** Sure.

8 (Trial Exhibit 7793 marked for identification)

9 **THE COURT:** Give me the number again. Seven what?

10 **MR. PAIGE:** 7793.

11 **THE COURT:** All right. That will be the  
12 demonstrative. All right. Okay.

13 Ms. Hurst, are you ready?

14 **MS. HURST:** I'm ready, Your Honor.

15 **THE COURT:** Please proceed.

16 CROSS-EXAMINATION

17 **BY MS. HURST:**

18 **Q.** Good morning, Dr. Astrachan.

19 **A.** Good morning.

20 **Q.** Let's talk about some terminology first. When you say  
21 "specification," you mean the -- both the API declaration and  
22 the text that describes how to use it; is that correct?

23 **A.** I think that's correct. The text meaning what's typically  
24 the comment or what you'd find along with the declaration to  
25 understand how to use it, that's right.

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1       **Q.** All right. And you don't consider the source code that  
2 implements the API to be part of the API; true?

3       **A.** I try to be very careful in speaking about the API method  
4 declarations. I think that when one understands API, that  
5 that's widely used and means different things, depending on the  
6 context, but for the purposes of what we're talking about here,  
7 we're just talking about the API method declarations.

8              There are other contexts in which somebody might use the  
9 implementing code to be part of the API, but I wanted to be  
10 careful here. I'm trying to be careful in saying just the  
11 declaring code from the API. It's possible that in other uses,  
12 it might include the implementing code and the specification.

13       **Q.** Is it true, sir, that you don't consider the source code  
14 that implements the API to be part of the API; you consider  
15 that the implementation that's not the API?

16       **A.** I think for the purposes of what we're talking about here,  
17 that seems like a reasonable way of looking at it, yes.

18       **Q.** Now, the purpose of an API is to understand and use the  
19 implementing software; true?

20       **A.** I -- I concentrate on use rather than understand. We  
21 don't really need to understand the implementing code to be  
22 able to use it. We need to understand it at a high level, but  
23 we don't need to understand the thousands of steps that might  
24 be needed.

25              I think what we need to understand is how to map the

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1 inputs to the outputs so that using the API is absolutely an  
2 important part of it.

3 **Q.** Is it true, sir, that APIs are ways to help understand and  
4 use software?

5 **A.** Absolutely.

6 **Q.** And is it true that the purpose of the 37 Java APIs in  
7 Android is the same as it is in the Java platform?

8 **A.** Well, I spoke earlier about how these method declarations  
9 are being used in a new context, and in that sense, that  
10 purpose is different because creating an application on the  
11 Android platform is a different context than creating an  
12 application on the laptop or desktop computer. So at that  
13 level, the API purpose is different because I'm creating a  
14 different kind of program.

15 At a lower level, as I mentioned earlier the API has the  
16 same purpose. It connects my code with the implementing code.  
17 That purpose is the same.

18 **Q.** It's true that knowing how the API is structured in Java  
19 will help in writing an Android program where the API is the  
20 same; correct?

21 **A.** Yes. That's correct.

22 **Q.** And you, sir, have offered no opinion on whether Android  
23 as a whole transformed the Java SE platform as a whole;  
24 correct?

25 **A.** I think that's correct, yes.

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1   **Q.** Now, you've been in here in court in the past week; true?

2   **A.** Yes.

3   **Q.** And you heard Mr. Rubin say that he used the Java SE APIs  
4   in Danger; right?

5   **A.** I did hear him say that.

6   **Q.** He used it in the Hiptop and T-Mobile Sidekick; true?

7   **A.** That's what I understand, yes.

8   **Q.** And you also heard him say that those were smartphones;  
9   right?

10   **A.** I heard him say that they were early smartphones.

11   **Q.** And you know from your work in this case, sir, that there  
12   was a company called Savage that also used Java SE in mobile  
13   phones; true?

14   **A.** That was represented to me as part of my work, yes.

15   **Q.** And you also know, sir, from your work in this case that  
16   Sun licensed Nokia to use Java SE in mobile phones; true?

17   **A.** I -- I accept that as true, sure.

18   **Q.** Now, designing a good API is difficult, isn't it?

19   **A.** Yes. The design process of creating an API is -- is  
20   difficult for sure.

21   **Q.** And designing an API is hard in the same way that being an  
22   artist or a concert violinist is hard; isn't that true?

23   **A.** I think that's a quote from one of my depositions where I  
24   said that being a football player or a concert violinist or a  
25   ballerina, all those are hard things to do, and being an

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1 effective software developer is also a hard thing to do. There  
2 are difficult kinds of hardness. I don't know how to be a  
3 football player. I have an idea how to be a developer.

4 Q. Do you stand by your testimony, sir, that designing an API  
5 is hard in the same way that being an artist or concert  
6 violinist is hard?

7 MR. PAIGE: Objection, Your Honor.

8 THE COURT: Overruled. Please answer.

9 THE WITNESS: I think they're hard. I don't think  
10 they're hard in the same way. They're very different kinds of  
11 tasks. They are hard. In the sense that they're hard, that's  
12 the same thing.

13 THE COURT: All right. The thing to do, just read  
14 exactly the question and answer, which you haven't done yet,  
15 and so we get the full context of the question and the answer  
16 and then we'll move on.

17 MS. HURST: Your Honor, September 9, 2011, deposition,  
18 at 127/23 to 128/13.

19 THE COURT: All right. Please read it exactly.

20 MS. HURST: Okay. We have a video for this one, Your  
21 Honor.

22 Clip 1057, please, Trudy.

23 (Video played.)

24 BY MS. HURST

25 Q. The Java programming language is different from the APIs;

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1 is that correct?

2 **A.** Yes. I think the programming language and the APIs are  
3 used together, but they're different. Yes. That's reasonable,  
4 yes.

5 **Q.** And Google could have written its own different Java API;  
6 is that true?

7 **A.** I think if you're asking a technical question, would it be  
8 possible to rewrite APIs using something that was a completely  
9 different package and class organization, that from a technical  
10 perspective that's true. But it wouldn't meet developer  
11 expectations using the Java programming language.

12 **Q.** The choice to use the 37 APIs was not a requirement of the  
13 Java programming language; correct?

14 **A.** That's correct.

15 And I'm not sure if I'm supposed to answer with the other  
16 thing that we talked about or not here.

17 **THE COURT:** All right. I think both sides will agree  
18 that we're going to eventually get to tell you a stipulation  
19 that pertains to a small number of the 37, which I believe  
20 they're going to say was necessary to use the programming  
21 language.

22 Am I correct on that?

23 **MS. HURST:** Yes, Your Honor.

24 **THE COURT:** Is that correct over there, Mr. Van Nest?

25 **MR. VAN NEST:** I'm not sure how small, but yes.

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1           **THE COURT:** Well, say in the range of three.

2           **MR. VAN NEST:** Yes.

3           **THE COURT:** All right. So something like that. We'll  
4 get you the details later. But that is what the witness is  
5 referring to.

6           So with that qualification, do you want to ask that  
7 question again?

8           **MS. HURST:** Yes.

9           **BY MS. HURST**

10          **Q.** With that qualification, sir, the choice to use the 37  
11 APIs was not a requirement of the Java programming language;  
12 correct?

13          **A.** That's correct. It wasn't a requirement in the language.  
14 It was required to meet developer expectations in using the  
15 language effectively. That was required.

16          **Q.** Well, when you say "developer expectations," what you mean  
17 are Google's business goals; isn't that right?

18          **A.** No. I was referring to a general idea of to use a  
19 language effectively, as I mentioned earlier, you need access  
20 to libraries. So that's independent of Google or a specific  
21 company.

22           Even for my students to work effectively in the classroom,  
23 they need access to the libraries to be able to use the  
24 language to create software.

25          **Q.** Isn't it true, sir, that if my question is, In the world

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1 where Google didn't want to leverage a large body of software  
2 developers, and didn't want to leverage a large existing body  
3 of code and other libraries, if that wasn't something they  
4 wanted to do, they could have refrained from using the APIs and  
5 done something different? Isn't that right?

6 **A.** I think I understand the question, which is, is there a  
7 universe in which Google engineers could have used a completely  
8 different set of APIs?

9 And I believe there is such a place.

10 **Q.** And that is -- place is particularly the place where  
11 Google doesn't want to leverage a large body of software  
12 developers and leverage a large existing body of code and other  
13 libraries; isn't that right?

14 **A.** I don't think I'm -- I know why Google would or wouldn't  
15 do something. I think it's certainly possible to create API  
16 packages with different labels. And then you wouldn't be using  
17 the same Java developers. So that's true. But I don't know  
18 what -- why Google might do something.

19 **Q.** It's true, sir, that the Java APIs are viewed by the  
20 community at large as reasonably good APIs, aren't they?

21 **A.** Yes, I think that's true.

22 **Q.** And you agree they are good APIs?

23 **A.** I do.

24 **Q.** And not all software is the same, is it?

25 **A.** If you mean not all software is good, I agree with that as

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1 well.

2 Q. Because there's a notion of quality in software; isn't  
3 that true?

4 A. There is a notion of quality in software, absolutely.

5 Q. And some lines of code are better than others?

6 A. Sometimes it's tricky to go on a line-by-line basis. But,  
7 in general, some software is better than others. And sometimes  
8 you might be able to look at a few lines of code and say, well,  
9 those are absolutely better than some other lines of code. So  
10 sure.

11 Q. And that's true of APIs as well. There's quality in APIs;  
12 right?

13 A. There is quality in APIs, yes.

14 Q. And a good API makes a programmer's task simpler than a  
15 bad API; true?

16 A. I think that's a reasonable characteristic -- one of the  
17 characteristics of what a good API is -- that it does make a  
18 programmer's task simpler, yes.

19 Q. In fact, it is your view that without the Java APIs that  
20 Google took, Java programmers would have found it cumbersome to  
21 program for the Android platform; isn't that right?

22 A. Let me equate that to what I said earlier, which is, in  
23 using these API declarations, Android met developer  
24 expectations. If they hadn't, it would have been cumbersome to  
25 use.

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1       So in using these API declarations, the Android platform  
2 was one that developers could use much more easily. It would  
3 have been cumbersome if they hadn't used these same API  
4 declarations.

5 **Q.** And so you thought it was a sound business practice for  
6 Google to leverage the existing community of developers,  
7 minimizing the amount of new material and maximizing existing  
8 knowledge; isn't that true?

9 **A.** That sounds like a reasonable statement. And I'm  
10 confident it's something that I said.

11 **Q.** All right. And you also agree, sir, that android would  
12 not work without the Java APIs that Google copied; isn't that  
13 right?

14 **A.** Android wouldn't work if you took one line of code out of  
15 Android. It would stop working.

16       So if you took the 37 API package declarations that Google  
17 used in creating it, it would also not work. But if you  
18 removed the libraries that I spoke about, it also would stop  
19 working.

20 **Q.** All right. Now, it's true, sir, that you are not an  
21 economist?

22 **A.** That is true. I am not an economist.

23 **Q.** And you did not apply any economic expertise in evaluating  
24 the effect of Android on Java SE; isn't that right?

25 **A.** That is true.

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1   **Q.** And, sir, is it also true that Java ME is a subset of  
2   Java SE?

3   **A.** There are editions to the Java ME that aren't part of  
4   Java SE because it runs on feature phones and embedded devices.  
5   But, in general, it's a subset.

6   **Q.** Is it true that most of Java ME is a subset of something  
7   in Java SE?

8   **A.** I think that's reasonable.

9   **Q.** Now, you were not offering any opinion in your report  
10   about whether SE could be used in mobile phones; is that right?

11   **A.** I think that I spoke about how Java SE had not been used  
12   in a mobile phone, in my report, other than on the Android  
13   platform.

14   **Q.** Well, and other than Danger and Savaje, that you heard  
15   about while you were sitting here this week; right?

16   **A.** Yes. But I believe you asked about my report. And I did  
17   not know -- I didn't hear about Danger and Savaje before I  
18   wrote my opening report.

19   **Q.** So that's not something Google called to your attention  
20   before you wrote your opening report?

21   **A.** I think that's reasonably correct, yes.

22   **Q.** Is it true, sir, that you have not offered an opinion  
23   whether Java SE is something that could be used in phones?

24   **A.** I'm trying to understand. You mean all of Java SE?  
25   Because as we've been talking about here, we've used API

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1 declarations from 37 packages to create this new context,  
2 Android phone.

3 If you're asking did I offer an opinion about Java SE on  
4 phones, I don't think that's in my report. I think that's  
5 right.

6 **MS. HURST:** Your Honor, permission to read from the  
7 March 2016 deposition, page 134, line 24, through 135 line 6.

8 **THE COURT:** Any objection?

9 Go ahead. No objection.

10 **MS. HURST:** (As read:)

11 **Q.** Now, is it your opinion in this case that because  
12 Java SE was designed with desktops in mind that it could  
13 never be used in phones?

14 **A.** I don't think I have offered an opinion about whether  
15 SE would be something that could be used in phones. So I  
16 don't -- but, so I don't think I offered that opinion,  
17 no."

18 **BY MS. HURST**

19 **Q.** Is it true, sir, that you don't have the business  
20 expertise to be able to say what a company's assets are?

21 **A.** I don't -- as I mentioned earlier, I'm not an economist.  
22 Nor am I a specialist in business practices, that's right.

23 **Q.** And you've never created software in a commercial setting?

24 **A.** I have created software that I've sold.

25 **Q.** Has that changed since the time of your last deposition in

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1 this matter?

2 **A.** I think at one point I talked about when I was a graduate  
3 student, friends of mine and I developed software for other  
4 aspects at -- at Duke for physicians in the hospital to  
5 accomplish certain tasks. And we sold that software to them.

6 I was never employed in a company in a commercial setting.  
7 But the software that I wrote at different times was something  
8 that I sold.

9 **Q.** In reaching your opinions that you've offered here today,  
10 you did not consider whether there was any harm to the Java  
11 platform in reaching those opinions; is that right?

12 **A.** I think that's right.

13 **Q.** The IEEE, that's the Institute for Electrical and  
14 Electronic Engineers; correct?

15 **A.** Yes, that's IEEE.

16 **Q.** And ACM is the Association for Computing Machinery. Is  
17 that right?

18 **A.** That's correct.

19 **Q.** And these are both organizations to which software  
20 engineers belong; is that true?

21 **A.** They can belong to them. It's not a requirement. But  
22 they are organizations that both academics and software  
23 engineers belong to, yeah.

24 **Q.** Is it true, sir, that ACM and IEEE work together to create  
25 some standards that apply to what you do?

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1     **A.** They do. They create many standards that are offered for  
2 academics and software practitioners to use in their work, yes.

3     **Q.** And you're not aware of any ACM standard that includes  
4 within it a requirement to use the Java SE API; correct?

5     **A.** I think that's right. Even in the curriculum standards  
6 that are part of ACM/IEEE, they talk about Java as being useful  
7 in academic courses. But there are no requirements that Java  
8 be used, nor that the Java SE platform be used.

9     **Q.** And you're not aware of any standard adopted by IEEE that  
10 includes within it a requirement to use the Java API; correct?

11    **A.** That's right. I'm not aware of any such standard. That's  
12 right.

13    **Q.** All right. Now, your expert report in this case did not  
14 identify any peer-reviewed article or publication of any kind  
15 saying that APIs are not subject to copyright; true?

16    **A.** Just trying to parse all the notes there.

17    **Q.** Yeah. It's a tricky one.

18    **A.** I'm pretty confident that if I said, I included no  
19 references to articles and journals that talked about the  
20 copyrightability of APIs.

21    **Q.** All right. No papers; no websites; no surveys; no  
22 peer-reviewed publications; correct?

23    **A.** I think that's right, yes.

24    **Q.** All right. And you don't know whether GNU Classpath or  
25 Apache Harmony were licensed; right?

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1     **A.** I have a hard time understanding that question.

2                 Both GNU Classpath and Apache Harmony have a license.

3                 They're licensed with different open source software licenses.

4                 So Apache Harmony has an Apache license, and GNU Classpath has  
5                 a GPL Classpath Exception license. But I'm guessing you're  
6                 asking me a different question.

7     **Q.** I'm asking you, sir, whether -- you don't know whether  
8                 they had licenses from a licensor to do the work that they did;  
9                 isn't that right?

10    **A.** I don't know whether they had a license from Sun to work  
11          on Java, that's correct.

12    **Q.** All right. And you would agree with me, sir, that you  
13          don't need fair use when you've been expressly authorized to do  
14          something; isn't that right?

15    **A.** Are you asking me a legal question? Because I'm -- I  
16          understand I'm not really supposed to answer questions from a  
17          legal perspective.

18    **Q.** I'm just asking your understanding, sir.

19          You don't need to make a claim of fair use if you've got a  
20          license; right?

21    **A.** That sounds to me like something legal, that I don't  
22          understand. So I'll say, caveat, I am not a lawyer.

23          (Laughter)

24    **A.** And then say that if I have a license to do something, I  
25          understand that that gives me permission to do exactly what

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1 that license says. And so I would be able to go forth and do  
2 it.

3 **Q.** The ACM, the Association of Computing Machinery, publishes  
4 a code of ethics; is that right?

5 **A.** Yes, they do.

6 **Q.** I'm going to show you Exhibit 5338.

7           **MS. HURST:** May I approach, Your Honor?

8           **THE COURT:** Sure, you may.

9 **BY MS. HURST**

10 **Q.** Do you recognize that as the ACM code of ethics?

11 **A.** I do.

12 **Q.** And you agree with the ACM code of ethics, don't you, sir?

13 **A.** I think, in general, it's a good guideline for academics  
14 and professionals to follow.

15           **MS. HURST:** I move the admission of Exhibit 5338, Your  
16 Honor.

17           **MR. PAIGE:** No objection.

18           **THE COURT:** Received.

19           (Trial Exhibit 5338 received in evidence.)

20           (Document displayed.)

21 **BY MS. HURST**

22 **Q.** Let's look at paragraph 1.5 on page 3 of Exhibit 5338.

23 **A.** Okay.

24 **Q.** And do you see what that head there is, sir?

25 **A.** I believe it says, "Honor property rights, including

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1       copyrights and patent."

2       **Q.**     And could you read the second sentence there.

3       **A.**     The one that starts with "Even"?

4       **Q.**     Yes.

5       **A.**     "Even when software is not so protected, such violations  
6       are contrary to professional behavior."

7       **Q.**     And would you read the next sentence, please.

8       **A.**     "Copies of software should be made only with proper  
9       authorization."

10      **Q.**     And the final one, sir.

11      **A.**     "Unauthorized duplication of materials must not be  
12       condoned."

13      **Q.**     Now, you tell your students that if they're going to use  
14       commercial software, they should pay for that software; right?

15      **A.**     For commercial software, yes, they should pay for it.

16       That's correct.

17      **Q.**     And you ask your classes how many -- raise your hand, how  
18       many of you have broken the law by downloading music or videos;  
19       right?

20      **A.**     I do. And it's surprising how many of them raise their  
21       hand.

22      **Q.**     And you tell them just because other people do it doesn't  
23       make it the right thing to do, don't you?

24      **A.**     I do.

25      **Q.**     Because you're trying to convey to them what is

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1 appropriate behavior for software professionals; isn't that  
2 right?

3 **A.** That's correct.

4 **Q.** You think the right thing to do is purchase things that  
5 need to be purchased; cite things that need to be cited; and act  
6 both according to the law and a sense of moral and ethical  
7 code; isn't that right?

8 **A.** That sounds like a good way of conducting what you do,  
9 yes.

10 **Q.** Now, you're familiar with open source licensing; right?

11 **A.** I have a general familiarity with open source and free  
12 software licenses, yes.

13 **Q.** You've read lots of literature written by people in the  
14 open source community. And you've read the open source and GNU  
15 licenses; right?

16 **A.** I've certainly read lots of literature. And I have read  
17 some of the licenses, yes.

18 **Q.** All right. You've heard of the GPL license?

19 **A.** Yes.

20 **Q.** And you have heard that referred to as a "copyleft"  
21 license; right?

22 **A.** I have.

23 **Q.** And it's a license that's sometimes called "viral"; is  
24 that true?

25 **A.** That is true.

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1   **Q.**   You don't like that word very much?

2   **A.**   I think there's a community of people that don't like  
3   "viral" because it reminds you of a virus, which is not a good  
4   thing.

5           But we've also heard of viral videos. And those are good  
6   things. So viral today, I think, is less offensive to a lot of  
7   people because viral videos are good.

8           So "viral" is not so bad. It's a word that some people  
9   don't like.

10   **Q.**   The word "viral" means that the code covered by the GPL  
11   license becomes infected with the license, such that all of the  
12   new changes downstream have to be published.

13           And they have to be published under the same license  
14   terms; is that right?

15   **A.**   Well, this is why, for example, people don't like the word  
16   "viral," because you're talking about infected.

17           The proponents of free software say, if you use something  
18   licensed with the GPL, then you are obligated to put it back to  
19   the community to share with everybody the same work that you've  
20   done because you got and were allowed to use it by them giving  
21   it to you.

22           So the free software people view it as giving back to the  
23   community. If you use something with GPL, and you make changes  
24   to it, if it's straight GPL you must give it back to the  
25   community as well.

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1   **Q.**   And you have to give it back to the community under the  
2   same terms, true?

3   **A.**   With the GPL license, that's correct.

4   **Q.**   And you agree that copyright is an indispensable tool in  
5   the open source movement for enforcing that kind of license,  
6   don't you?

7   **A.**   That's my general understanding, that the reason that  
8   software can be licensed with the GPL and other licenses is  
9   because if you decide to do that, it's because you have the  
10   copyright. And that's what gives you the ability to license it  
11   with different licenses, that's correct.

12   **Q.**   And without the copyright, the owner of the copyright  
13   couldn't enforce the give-back provision; right? There would  
14   not be any way to make people follow giving back?

15   **A.**   Now, that sounds like a legal thing. I'm not sure how to  
16   do that.

17           I understand copyright is what allows me to license  
18   things. I don't know about how to enforce a license.

19   **Q.**   All right. You agree, sir, that if an individual or -- as  
20   an individual or company, if you use software with a specific  
21   license then you should follow the terms of that license;  
22   right?

23   **A.**   I think that's, in general, a good idea, yes. You should  
24   try to follow the license, yes.

25   **Q.**   And you also agree that if you're not prepared to obey

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1 those terms, then you should not make excuses about it later;  
2 isn't that right?

3 **A.** Sounds like something that Dad would say. But, sure, I'll  
4 go with that.

5 **Q.** Sir, if everyone was able to ignore the restrictions of  
6 open source licenses by claiming that it was fair use because  
7 it was open in the first place, then pretty soon there would be  
8 no more open source licensing, would there?

9           **MR. PAIGE:** Objection, Your Honor. Argumentative.

10           **THE COURT:** Well, no. That's what experts are for.  
11 They are arguments to begin with. So it's okay to argue with  
12 an expert. Overruled.

13 Please answer the question.

14           **THE WITNESS:** Well, I think that was kind of a  
15 complicated question.

16 I think the question was, if all open source licenses were  
17 ignored because fair use was being used to claim that they were  
18 ignored, then wouldn't the world be different --

19           **THE COURT:** No, that's not quite what she said. Let's  
20 see if I can say it.

21 The open source system does have a license, the GPL  
22 license, for example. And what Ms. Hurst is asking, if you  
23 acquired something under a GPL license as an open source, but  
24 then claimed that you didn't need a license to begin with  
25 because it was fair use, because it was being open sourced,

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1 then wouldn't that erode and prejudice the whole open source  
2 system?

3 That's not quite as good a question.

4 **MS. HURST:** It was far better than mine, Your Honor.

5 **THE COURT:** That's what she's getting at. So what do  
6 you say to that point?

7 **THE WITNESS:** I don't think that's right, because I  
8 think that it -- it's trying to equate something in general to  
9 what we're talking about here, which is using just a very small  
10 amount of the code.

11 I mean, as I understand fair use, we've heard about the  
12 four factors that I don't understand from a legal perspective.  
13 I only understand from what was represented here in the court.

14 And if I use the entirety of a piece of software without  
15 paying attention to the license, that would be an issue. But  
16 if I'm just using parts of the software or using it in  
17 different ways, then, as I understand it, the reason that we're  
18 here is to understand whether a use might be fair.

19 So I don't think it's reasonable to say that if fair use  
20 was just used to copy software indiscriminately, wouldn't that  
21 change open source, I don't think that's a reasonable question.  
22 So I don't think I can really answer it that way.

23 **MS. HURST:** Your Honor, permission to read from the  
24 deposition of March 2016, at page 30, lines 22 through 34 line  
25 10.

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1           **THE COURT:** Okay. Go ahead.

2           **MS. HURST:** (As read:)

3           **"Q.** Let's just stick with some flavor of GPL; right. The  
4 software has been made available, let's say under GPLv2.  
5 You've got some group of people that come along and they  
6 take it and they use it, and they don't give back their  
7 modifications. And then they say, 'Well, because you made  
8 it freely available, I shouldn't have to give you back my  
9 modifications. It's not hurting you any if I don't do  
10 that.' What do you think of that?

11          **"A.** My understanding is if, as an individual or company,  
12 I use software with a specific license, then I should  
13 ascribe to the terms of that license.

14          **"Q.** And you don't think you should make an excuse and say  
15 you don't have to comply just because somebody made it  
16 freely available in the first place?

17          **"A.** Again, in the hypothetical that you are providing, if  
18 I am using software with a specific license, I should use  
19 and obey the terms of that license.

20          **"Q.** All right. But, really, what I want to get of the  
21 idea of whether you think there's an excuse for not  
22 following a license because the code was made freely  
23 available under that license in the first place?

24          **"A.** I think that if as a software developer I know,  
25 understand licensing, and that's much more something that

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1       is important in today's software world, that I should base  
2       the libraries and softwares I'm using on how I am going to  
3       put and give back what I do so that if I'm a developer  
4       using a GPL-based piece of software, I should be prepared  
5       to obey the terms of that license. And if I am not, I  
6       should look for a different licensed piece of software.

7       **"Q.** So, in other words, if you are not prepared to obey  
8       those terms, you should not make excuses about it later?

9       **"A.** I think doing that is not something that I would  
10      think is proper in the sense of both either ethics or  
11      legal as you mentioned before."

12       **"Q.** And, in fact, if everybody did that, if they just  
13      ignored the terms of the license and then made excuses  
14      later, pretty soon that would kill open source licensing,  
15      wouldn't it, because it would kill the whole obligation to  
16      give back that was part of that copyleft foundation?

17       **"A.** I don't think I'm omniscient enough to be able to say  
18      what would make or sustain or stop the free software open  
19      source licensing. I think in the current world, those are  
20      working very well. If you are asking to imagine a world  
21      in which they are no longer working, I guess that's  
22      conceivable. But I'm not prepared at this point to say  
23      why that might happen.

24       **"Q.** Don't you think it would be a logical conclusion,  
25      though, to put 1 and 1 together and reach 2, that if

everybody just disregarded the license terms and stopped giving back, that the incentives for open source software would be substantially diminished?

"A. I think that's a hypothetical. It's a little difficult to get my head around because what, as I understand it, you have asked, if every single group, person, individual stopped obeying licenses that they were supposed to do, would that change the landscape, that's seems reasonable that it might change the landscape. But how it would change it is not something I am prepared to, kind of, undertake as an intellectual exercise.

"Q. And you have not done that in connection with this case, just to be clear?

"A. Not in connection with this case, I have not."

**MS. HURST:** Pass the witness.

**THE COURT:** All right. We will now go back to redirect.

## **REDIRECT EXAMINATION**

BY MR. PAIGE

Q. Professor Astrachan, you had mentioned in your testimony "straight GPL."

What were you differentiating when you said "straight GPL"?

A. Well, we talked about, with OpenJDK, that it's GPL Version 2.0 with a Classpath Exception. And I explained how linking

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1 worked as part of explaining that Classpath Exception. And, in  
2 particular, that that allows a developer to create their  
3 software with a different license than the GPL.

4 So whereas the GPLv2 by itself might be considered viral  
5 or require you to give it back, with the Classpath Exception  
6 that allows me to write software with a different set of  
7 license if I'm linking it against something else.

8 **Q.** So if there's the Classpath Exception, does that infect  
9 the software you're linking it to?

10 **A.** No. Although, I don't really like the word "infect." In  
11 the case we're talking about here, the software would not be  
12 tainted or infected, or be required to give back. That would  
13 not be the case.

14 **Q.** Now, Ms. Hurst asked you whether Android transformed the  
15 Java SE as a whole.

16 Do you have an opinion as to whether Java transformed the  
17 37 API packages here?

18 **A.** I do. I think those package labels were absolutely  
19 transformed in creating this new context, the mobile platform  
20 that is Android.

21 That is absolutely a new context and shows how those  
22 labels were transformed in creating that platform.

23 **MR. PAIGE:** I pass the witness, Your Honor.

24 **THE COURT:** All right. Anything more, Ms. Hurst?

25 **MS. HURST:** Two questions, Your Honor.

**THE COURT:** Okay.

## **RECROSS - EXAMINATION**

BY MS. HURST

**Q.** If we look at Exhibit 43.1.

(Document displayed.)

Q. And this was the big board that you had during your discussion, sir.

Those core libraries, and the Dalvik Virtual Machine, and the green libraries, and the blue application framework, those are all part of the Android program; is that right?

**A.** Yeah.

**MR. PAIGE:** Objection. This is beyond the scope of the redirect.

**THE COURT:** It does sound like it's beyond the scope.

**MS. HURST:** It's related to the testimony regarding linking Your Honor

**THE COURT:** All right. I'll take your word for it.

Objection overruled for now.

BY MS. HURST

**Q.** Those are all part of the same, the program Android; isn't that right?

A The Android platform they're part of, yes

Q. And that program includes 37 Java APIs in the core libraries right?

<sup>1</sup> The API package declarations and their independent

1 implementations are part of those libraries, that's correct.

2 **MS. HURST:** All right. No further questions.

3 **THE COURT:** Okay. All right. So may the witness be  
4 excused?

5 **MR. PAIGE:** Yes, Your Honor.

6 **THE COURT:** Okay. We'll excuse you for now. Please  
7 leave all the documents up here unless you brought them to the  
8 stand. And counsel will take care of them.

9 And you may -- you are entitled to have a seat since the  
10 lawyers have agreed that the retained experts may stay in the  
11 room.

12 Right?

13 **MR. VAN NEST:** That's right, Your Honor.

14 **MR. BICKS:** Yes.

15 **THE WITNESS:** Thank you.

16 **THE COURT:** Okay. Thank you, sir.

17 All right. I wanted to read that instruction to the jury,  
18 but I think you're about to wind up; right?

19 **MR. VAN NEST:** I am.

20 **THE COURT:** Okay. So why don't I let you do that, and  
21 then I'll read the instruction.

22 **MR. VAN NEST:** Your Honor, we have a list of exhibits  
23 that the parties have agreed can be admitted.

24 And I'm going to read part of it, and then Mr. Mullen may  
25 supplement it. But let me read these five.

1 TX 5868. TX 7368. TX 7237. TX 7239. And TX 2036. We'd  
2 move those into evidence.

3 **THE COURT:** Any objection?

4 **MR. BICKS:** No objection, Your Honor.

5 **THE COURT:** All received.

6 (Trial Exhibits 5868, 7368, 7237, 7239, 2036 received in  
7 evidence.)

8 **MR. VAN NEST:** There are also some exhibits on the  
9 preadmitted list, that Mr. Mullen is going to reference now.

10 **THE COURT:** Okay.

11 **MR. MULLEN:** Your Honor, on the preadmitted list we  
12 have just five or six. They are TX 573. TX 2009. TX 2010.  
13 TX 2019. 2021. 2237. And 2564.

14 **THE COURT:** Any objection?

15 **MR. BICKS:** No objection.

16 **THE COURT:** All of those are received.

17 (Trial Exhibits 573, 2009, 2010, 2019, 2021, 2237, 2564  
18 received in evidence.)

19 **MR. MULLEN:** Thank you.

20 **THE COURT:** Okay.

21 **MR. VAN NEST:** Your Honor, at this time, subject to  
22 some potential housekeeping related to exhibits, Google rests  
23 its case-in-chief.

24 (Defendant rests.)

25 **THE COURT:** All right. So we've reached a milestone.

**PROCEEDINGS**

1       The party with the burden of proof is resting its  
2 case-in-chief. And we are about to start to hear the other  
3 side's case, since we have 40 minutes left. And we will get  
4 right down to it.

5       Would it help you if I postponed the reading of this,  
6 given the time? It's up to you.

7       This is the thing about expert witnesses. I don't -- in  
8 other words, I don't -- if we can finish your witness today, I  
9 don't want to inconvenience your witness.

10       **MR. VAN NEST:** We can wait, Your Honor, on the reading  
11 you're talking about.

12       **THE COURT:** How about you, can you -- I'm going to  
13 read this tomorrow.

14       I have an instruction that I have constructed for you on  
15 expert witnesses. And I want you to -- because you're going to  
16 have a lot of expert witnesses in this case. But I'll read  
17 that in the morning, rather than read it to you right now, if  
18 that's okay with counsel.

19       Is that all right?

20       **MR. VAN NEST:** That's fine, Your Honor.

21       **THE COURT:** How about you?

22       **MR. BICKS:** Your Honor, Oracle would intend to be  
23 making a Rule 50A motion.

24       **THE COURT:** Okay. I'm going to deem that to be made  
25 right now, but we'll hear it later.

**PROCEEDINGS**

1           **MR. BICKS:** Thank you.

2           **THE COURT:** But is it okay with you if I read this  
3 instruction tomorrow morning, rather than now?

4           **MR. BICKS:** That's fine.

5           **THE COURT:** At this time, then, we will turn  
6 immediately to the -- to the Oracle case.

7           And I just want to give you a heads-up. I think we're  
8 about 60 -- even though we're further ahead than it sounds,  
9 because it's about 60 percent of the time, a little more than  
10 that has actually been used. So we're on track to finish this  
11 case this week, evidence-wise. And then argue it next week.

12 Okay.

13           And remember, tomorrow I'm going to give you an  
14 instruction that will be about two minutes long on expert  
15 witnesses. And we just heard one from -- I'll put that in  
16 quotes. "Expert witness," in quotes because that's how lawyers  
17 refer to them, all retained experts. So I need to give you an  
18 instruction on that, but it's going to wait until tomorrow.

19           Let's call your first witness.

20           **MS. HURST:** Your Honor, Oracle calls Safra Catz.

21           **THE COURT:** All right. Let's bring her in.

22           Welcome. How are you today?

23           **THE WITNESS:** Fine. Thank you.

24           **THE COURT:** Please raise your right hand.

25

1                   **SAFRA CATZ, PLAINTIFF'S WITNESS, SWORN**

2                   **THE CLERK:** Please state your name for the Court, and  
3 spell your last name for the record.

4                   **THE WITNESS:** My name is Safra Catz. C-a-t-z.

5                   **THE COURT:** All right. You're coming through loud and  
6 clear. That's great. Welcome, again.

7                   Go ahead, Ms. Hurst.

8                   **MS. HURST:** Thank you, Your Honor.

9                   **DIRECT EXAMINATION**

10                  **BY MS. HURST**

11                  **Q.** Ms. Catz, would you please introduce yourself to the jury  
12 and tell us a little bit about your personal background.

13                  **A.** Sure. My name is Safra Catz. I was born in Israel. And  
14 I came to the United States in 1967, with my parents. I became  
15 an American citizen in 1972.

16                  I'm married. And I have two sons. And I live near our  
17 Redwood City headquarters.

18                  **Q.** And what is your role at Oracle?

19                  **A.** I am co-CEO with Mark Herd. And I'm responsible for  
20 day-to-day operations of Oracle and a number of other parts of  
21 our business, as well as I'm chairman of our educational  
22 foundation.

23                  **Q.** And how did it come to pass that you are presently the CEO  
24 or co-CEO at Oracle?

25                  **A.** Well, I was -- I originally joined in 1999, to help Larry

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1 Ellison, our CEO at the time, do a business transformation of  
2 Oracle.

3 And over the time period that was extremely successful,  
4 and I was given additional responsibilities. I was chief  
5 financial officer a number of times. I became president. And  
6 I was promoted to co-CEO over a year ago.

7 **Q.** And are you also a member of the board of Oracle?

8 **A.** Yes. I've been a member of the board of Oracle for over a  
9 decade.

10 **Q.** And prior to joining Oracle, could you give us a brief  
11 description of your employment history.

12 **A.** Uhm, well, actually, other than waitressing, I have had  
13 one other job. I worked on Wall Street right out of law  
14 school, at a small investment bank. And I started a group  
15 which focused exclusively on software companies. It was the  
16 '80s, and software companies were really coming into their own  
17 at that time.

18 **Q.** All right. Could you give us a brief introduction to  
19 Oracle the company.

20 **A.** Sure. Oracle was founded nearly 40 years ago, 1977, as a  
21 database company. And it was founded by our current chairman  
22 and chief technology officer, Larry Ellison. He founded it  
23 with two of his colleagues. And it started with database and  
24 expanded from that to applications and ultimately to hardware  
25 and cloud services.

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1   **Q.**   And what, in a nutshell, is Oracle's business?

2   **A.**   Well, what Oracle does is we focus on solving the most  
3   complicated technical issues in computing. We make all sorts  
4   of software that most people don't actually realize they're  
5   using our software. They use it every day, multiple times a  
6   day, to get their jobs done.

7   **Q.**   And who are Oracle's customers?

8   **A.**   Our customers are anywhere from Ford Motor Company to  
9   Tesla to, like, the oldest companies like General Electric, to  
10   Facebook and Stripe.

11       We help hospitals, so, M.D. Anderson, in cancer studies,  
12   to University of Pennsylvania, medical centers, universities,  
13   like the University of California. It's businesses. It's  
14   government. It's the Air Force, the Navy.

15       And including things like Levi Stadium. When you order a  
16   hot dog, you actually use Oracle software to do it.

17   **Q.**   What are some other examples of how the jury might be  
18   interacting with Oracle software and not even realize it?

19   **A.**   Well, anytime they use an ATM machine, it's hitting  
20   hundreds of Oracle databases.

21       When they make a phone call, the very way that the phone  
22   company knows where your cell phone is, is again hitting Oracle  
23   databases all over.

24       Really, every time they get a paycheck, most times it's  
25   been Oracle software that actually makes that possible.

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1   **Q.** All right. And how many people does Oracle employ?

2   **A.** Well, we have over 135,000 right now.

3   **Q.** And does Oracle -- is it located in the Bay Area?

4   **A.** Yes. We're in Redwood Shores. But we also have  
5 operations in Pleasanton, in Santa Clara, up here in the city.  
6 We have a lot of facilities. We've got thousands of people  
7 here.

8   **Q.** All right. Ms. Catz, there's a thing over here on this  
9 big whiteboard called the "Joint Timeline."

10           Do you see that?

11   **A.** Yes, I do.

12   **Q.** All right. And if you look over there, you might see  
13 that -- was there some point in time when Oracle considered  
14 acquiring Sun Microsystems?

15   **A.** Yes. In early 2009.

16   **Q.** Okay. So over here, early 2009 (indicating).

17           All right. And how did that come about?

18   **A.** Well, we had always worked with Sun Microsystems over the  
19 years, for many years. And once Java was developed, we  
20 actually used Java to build our software, most of our  
21 middleware and applications.

22           And when the Internet bubble imploded in 2001, a number of  
23 companies started to have problems. And over time some of them  
24 recovered and some didn't. And Sun Microsystems, by 2005-2006,  
25 was having some problems.

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1       And at one point, Scott McNealy, who is the former CEO,  
2 stepped down. There was a new CEO with a different strategy,  
3 that was very unsuccessful. And so Sun Microsystems did not do  
4 well during that period, and we were concerned that there would  
5 be issues with funding Java.

6 **Q.** All right. And so how did the decline in Sun's business,  
7 if at all, affect your thinking about Java?

8 **A.** Well, the first thing was we were concerned that they  
9 wouldn't invest. And Java was absolutely critical for the  
10 success of our platform and our product.

11       And, secondly, as their stock price went down  
12 precipitously during this period, there was the possibility  
13 that another company might buy them or they might go private,  
14 and that would put us at a disadvantage regarding Java.

15 **Q.** All right. And so you mentioned the precipitous decline  
16 in stock price. About when did that occur?

17 **A.** 2007 to 2008. It was down about 80 percent at that point.

18 **Q.** All right. And so what were the next steps in connection  
19 with Oracle's consideration of acquiring Sun?

20 **A.** Well, the Sun Microsystems was a hardware and software  
21 company. And we were just a software company. So at first we  
22 looked at just buying the software business. And we offered to  
23 Sun for us to buy some of their software assets, including  
24 Java. But they said no.

25 **Q.** All right. And then what happened next?

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1     **A.** Well, we read in the *Wall Street Journal* and in all the  
2 newspapers that one of our competitors --

3                 **MS. ANDERSON:** Objection, Your Honor. The witness is  
4 testifying about a news article.

5                 **MS. HURST:** It's not offered for the truth, Your  
6 Honor. It's just for the sequence of events.

7                 **THE COURT:** Is that inflammatory?

8                 **MS. HURST:** Not at all, Your Honor.

9                 **THE COURT:** All right. I'll take your word for it.

10 If it's inflammatory, I'll have to strike it out.

11 So stick to noninflammatory things you read.

12                 **THE WITNESS:** Yes. We read that IBM was going to buy  
13 Sun. And so we thought we would rather buy Sun, if we could,  
14 than have IBM buy it.

15                 **THE COURT:** Okay. That's all right. That's not  
16 inflammatory.

17                 (Laughter)

18                 **MS. HURST:** Thank goodness.

19                 **BY MS. HURST**

20     **Q.** All right. And so is that what happened?

21     **A.** Yes. Actually, we did very fast due diligence. And we  
22 actually outbid IBM and agreed with Sun for us to acquire them  
23 in April of 2009.

24     **Q.** All right. So that's over here on the timeline at  
25 April 2009?

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1      **A.** Yes.

2      **Q.** All right. Before you, Ms. Catz, there's a stack of  
3 documents and folders.

4            Do you see there Exhibit 6792?

5      **A.** Yes, I do.

6      **Q.** All right. Do you recognize Exhibit 6792?

7      **A.** Yes. This is the press release we put out on the morning  
8 that we were announcing that we were buying Sun Microsystems.

9      **Q.** And Oracle was a public company then?

10     **A.** Yes, it was.

11     **Q.** And you had an obligation to report material events such  
12 as that acquisition?

13            **MS. ANDERSON:** Objection. Leading, Your Honor.

14            **MS. HURST:** It's foundation for the admission of the  
15 document, Your Honor.

16            **THE COURT:** Well, it's foundational enough.

17 Overruled.

18 Please answer.

19            **THE WITNESS:** Yes.

20            **MS. HURST:** Move the admission of 6972.

21            **MS. ANDERSON:** Objection, Your Honor. This is a  
22 hearsay document. And, also, there is no ruling; although, I  
23 understand that issue may be handled in another way. But this  
24 is still a hearsay article.

25            **MS. HURST:** It's a business record, Your Honor, that

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1 they had an obligation to report to the SEC. And it's been  
2 redacted for the information that's covered by the --

3 **THE COURT:** Is this an SEC filing?

4 **MS. HURST:** It was later filed --

5 **BY MS. HURST**

6 **Q.** Ms. Catz, was this press release later filed with the SEC?

7 **A.** Yes. It was filed that day.

8 **MS. ANDERSON:** Your Honor --

9 **THE COURT:** Well, let me see it. I'm sorry, I have to  
10 look at it.

11 (Pause)

12 **THE COURT:** Do you think next time you could make the  
13 print smaller?

14 (Laughter)

15 **THE COURT:** This is a hearsay document. Offered by  
16 you, it's hearsay.

17 **MS. HURST:** Well, it's a business record, Your Honor.

18 **THE COURT:** No, it's not a business record. Come on.

19 This is not in evidence. The witness can testify to  
20 probably everything in there. But she -- it is a hearsay  
21 document. The objection is sustained.

22 **MS. HURST:** All right.

23 **BY MS. HURST**

24 **Q.** What, if anything, did Oracle announce about the  
25 significance of Java in connection with its acquisition of Sun,

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1 Ms. Catz?

2 **A.** We announced that we thought Java was the single most  
3 important software asset Oracle had ever acquired.

4 **Q.** And how did Oracle plan to approach Java after the  
5 acquisition?

6 **A.** We intended to invest in it and bring the Java community  
7 together, and come out with new versions of Java going forward.

8 **Q.** What was your role in the acquisition of Sun?

9 **A.** I did the original due diligence. Meaning I met with Sun.  
10 I reviewed the Sun business case. I negotiated the  
11 transaction. I recommended it to -- with Larry Ellison,  
12 Oracle's CEO at the time, to the board of directors. And I  
13 voted for it. I was also in charge of the integration  
14 planning.

15 **Q.** Did you buy Sun because you wanted to file a copyright  
16 lawsuit against Google?

17           **MS. ANDERSON:** Objection. Leading.

18           **THE COURT:** It is leading.

19           This is an exception that I allow whenever somebody makes  
20 an accusation. I will allow them to ask a direct leading  
21 question to elicit the denial. It's a time-honored exception.

22           Did you answer the question?

23           **THE WITNESS:** No.

24           **THE COURT:** Okay. Next question.

25

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1 BY MS. HURST

2 Q. No, you did not; right?

3 A. No, we did not. We did not buy Sun to file this lawsuit.

4 Q. Now, there was a period of time between when you agreed to  
5 acquire Sun and the transaction was final; is that right?

6 A. Yes.

7 Q. All right.

8 A. It was not final for months.

9 Q. And that's over here on the timeline as well?

10 A. Yes. It became final in January 2010.

11 Q. And who was in charge of Sun in that period of time  
12 between April 2009 and January 2010?

13 A. The Sun management team and the Sun board of directors.

14 Q. And why was that?

15 A. Because we didn't own Sun.

16 Q. Okay. And how would you characterize the relationship  
17 between Oracle and Sun during that period of time?

18 A. Well, I believe that when we announced that we were buying  
19 Sun, and not IBM, employees generally were very excited and  
20 very happy about it.

21 Our relationship with the CEO of Sun was not as -- as  
22 good.

23 THE COURT: Is not as sunny.

24 (Laughter)

25 MS. HURST: Not as sunny.

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1 BY MS. HURST

2 Q. Before we get to that, could you give the jury some  
3 examples of the sorts of things that came up.

4 I think you said integration planning was one of the  
5 things you worked on?

6 A. Yes.

7 So integration planning is really a preparation on both  
8 sides, both on the Oracle side and the Sun side, of how the two  
9 companies should come together and what would happen after the  
10 acquisition closed, assuming we got permission by the  
11 government.

12 And so it would be things like they were in the process of  
13 upgrading their accounting system. But we already had an  
14 accounting system that was completely current and up-to-date.  
15 And so we didn't think -- you know, we advised them that  
16 whatever they did upgrading their system would just be wasted,  
17 and that they may want to delay that.

18 Q. Were there other examples?

19 A. Oh, yes. They -- they were in very difficult  
20 circumstances at the time, and were in the process of doing a  
21 number of layoffs, mostly in the research and development  
22 groups.

23 And we advised them that we really wanted those people to  
24 stay at Oracle; and that we would want to hire them back; and  
25 that we would hope that they did not fire them.

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1   **Q.** And what was the result?

2   **A.** They actually ultimately did not fire them.

3   **Q.** And did that episode, in connection with the layoffs, did  
4   that lead to any tension between you and Mr. Schwartz?

5   **A.** Yes, it did. He thought -- yes, it did. We -- we really  
6   did not want any more actions that were damaging Sun  
7   Microsystems. And we actually asked the board of directors if  
8   it was possible for them to assign a different executive to  
9   lead the company and the integration until we could take over.

10   **Q.** And did that come about?

11   **A.** Yes. They -- they assigned an executive vice president  
12   named Brian Sutphin, S-u-t-p-h-i-n.

13   **Q.** Now, before that happened, did Android come up at all in  
14   your discussions with Mr. Schwartz?

15   **A.** Yes. It actually came up right after the announcement of  
16   the merger.

17   **Q.** All right. Let me ask you, Ms. Catz, to please put that  
18   first document aside and look at the next one, which should be,  
19   if all has gone well, Exhibit 2362.

20                  Do you have that?

21   **A.** Yes, I do.

22   **Q.** And do you recognize Exhibit 2362?

23   **A.** Yes, I do.

24   **Q.** And is that an email exchange among you and Mr. Schwartz  
25   and, ultimately, Mr. Ellison?

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1     **A.** Yes, it is.

2     **Q.** All right. And this was an email that you received at the  
3 time in connection with the acquisition of Sun; is that right?

4     **A.** Yes.

5     **Q.** All right.

6                 **MS. HURST:** Your Honor, this is responsive to the  
7 Schwartz testimony that was elicited in the defendant's case.  
8 I would like to offer it as a response to that.

9                 **MS. ANDERSON:** Your Honor, objection. The document is  
10 hearsay among representatives of the same company.

11                 **MS. HURST:** May I show you the document, Your Honor?

12                 **THE COURT:** Yes, you may.

13                 **MS. HURST:** The part at the bottom of the first page,  
14 discussing battles, Your Honor, that I'd like to offer it for.

15                 **THE COURT:** Do I look at the back page too?

16                 **MS. HURST:** No, just the bottom of that first page is  
17 the important part, where Mr. Schwartz is writing about  
18 battles.

19                 **THE COURT:** Well, I'm going to let this in, but I have  
20 to give a limiting instruction. So are you going to put this  
21 on the screen?

22                 **MS. HURST:** Yes, Your Honor.

23                 **THE COURT:** I prefer to give the limiting instruction  
24 once the jury can see this.

25                 **MS. HURST:** All right.

CATZ - DIRECT / HURST

1           **THE COURT:** So 2362 allowed in evidence with a  
2 limiting instruction.

3           (Trial Exhibit 2362 received in evidence.)

4           **MS. HURST:** Just the bottom part, Trudy.

5           **THE COURT:** Members of the jury, if you'll look down  
6 near the bottom, you'll see that there's an email from Jonathan  
7 Schwartz. I believe he was the witness we had on here last  
8 week; right? To Mr. Ellison and to Safra Catz in 2009.

9           And I guess the part that Counsel is referring to,  
10 Mr. Schwartz says something along the lines of a personal tour,  
11 about what they've been up to.

12           "There's obviously a lot we didn't focus on during the  
13 past (worldwind) week ... from the instrumentation we're  
14 building into our open source assets (so they auto-generate  
15 data about the millions of customers downloading them) to the  
16 battles with Adobe Flash/Google Android, Microsoft's  
17 distribution dependencies, etc."

18           All right. So the limited purpose for which this will be  
19 allowed is to show that a communication did exist in April 29;  
20 the fact of the communication about Google Android between  
21 these -- between Schwartz and this witness.

22           And that's -- but it is not admissible -- it is hearsay --  
23 to the truth of whether or not there was a battle going on or  
24 not. That would be hearsay. And it's not admissible for the  
25 truth of whether or not there was a battle going on. But it is

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1 admissible for the information that was received by this  
2 witness.

3 I hope that makes sense. But that's the limited purpose  
4 for which this can be received in evidence because, otherwise,  
5 it is hearsay.

6 **MS. HURST:** Thank you, Your Honor.

7 **BY MS. HURST**

8 **Q.** As part of the integration planning process with Sun,  
9 Ms. Catz, did you become further aware of what battles with  
10 Google Android were at issue with Sun?

11 **MS. ANDERSON:** Objection. Leading and  
12 mischaracterizes the text of the document.

13 **THE COURT:** Well, it's -- the witness can explain.  
14 Overruled. Please answer.

15 **MS. ANDERSON:** Thank you, Your Honor.

16 **THE WITNESS:** Yes, I became aware of the fact that  
17 Google had -- was using Java without a license.

18 **BY MS. HURST**

19 **Q.** And what, if anything, did Mr. Schwartz tell you about  
20 that?

21 **A.** That they had worked very hard --

22 **MS. ANDERSON:** Objection, Your Honor. Hearsay.

23 **THE COURT:** All right. The reason this is -- I have  
24 to give another limiting instruction. And I'm sorry I have to  
25 do this to the jury.

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1       But, ordinarily, this would be hearsay and not admissible.  
2 However, Google has laid a suggestion before you that Oracle is  
3 the one who cooked up a lawsuit, and that this -- this whole  
4 lawsuit is something that Sun never wanted to do, but Google  
5 thought -- I'm sorry, Oracle thought of it on its own, after  
6 acquiring the company.

7       That may or may not be true. I don't know. That's for  
8 you to evaluate; not for me to evaluate.

9       But in response to that suggestion, counsel -- I'm sorry,  
10 Oracle is entitled to show that the idea preceded the  
11 acquisition, in order to meet the suggestion that has been made  
12 by Google.

13       So it's okay, then, for that limited purpose, to show that  
14 this communication was made by Sun before the acquisition.  
15 That's the limited purpose for which this hearsay is admitted.  
16 That's the only way it can be admitted. And for that limited  
17 purpose, it will be admitted.

18       Overruled. Please go ahead.

19                   **MS. HURST:** Thank you, Your Honor.

20                   **BY MS. HURST**

21       **Q.** So with that understanding, Ms. Catz, what did  
22 Mr. Schwartz tell you about the battles with Google?

23       **A.** He told us that they'd been talking with Google and had  
24 been trying to get a -- get them to license Java; and that they  
25 had taken -- that Android was an unauthorized fork of Java.

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1       **Q.**    What do you mean by that, "fork"?

2       **A.**    That it was a noncompatible version of Java.

3       **Q.**    When you learned this from Mr. Schwartz, did that stop you  
4       from going ahead with the acquisition?

5       **A.**    No, it didn't, because Java was too important as a  
6       foundation for our own products. And it was very important  
7       that we have Java and that we invest in Java going forward.

8       **Q.**    What was the significance, if anything, as you understood  
9       it, of this forking idea?

10      **A.**    Well, the problem with forking is that one of the key  
11       tenets of Java is that a developer can write it once and it can  
12       run anywhere. And Sun had worked for years in building the  
13       Java community and building up many, many, many, many  
14       developers who learned Java.

15           The problem is that forking breaks apart the community,  
16       because if you write it for Android it actually runs only on  
17       Android. Unlike if -- and if you write it for Java, it won't  
18       run on Android.

19           So one of the most, sort of, liberating and important  
20       things about Java was this write once, run anywhere. And this  
21       was all of a sudden stopping that.

22           Additionally, what this also meant is Android, which was  
23       free, was taking away customers from Sun --

24           **MS. ANDERSON:** Objection, Your Honor. This witness  
25       was not disclosed as an expert. To the extent she's moving

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1 into expert testimony on market effects, we would object as  
2 beyond the scope of your disclosure.

3 **MS. HURST:** It's been offered to describe her  
4 understanding at the time, Your Honor.

5 **THE COURT:** Well, ask a -- so far everything is okay,  
6 subject to the limitation I gave.

7 Ask a fresh question before we get off into a new subject.

8 **MS. HURST:** Will do, Your Honor.

9 **BY MS. HURST**

10 **Q.** So there was a regulatory process between April of 2009  
11 and January of 2010?

12 **A.** Yes. We had to get approval from the U.S. government and  
13 also from the European Commission and a number of other  
14 countries.

15 **Q.** And were you involved in that regulatory process?

16 **A.** Yes, I was very involved.

17 **Q.** And what, if anything, during that process did you learn  
18 about Sun's position with respect to Android?

19 **MS. ANDERSON:** Objection, Your Honor. Hearsay.

20 **MS. HURST:** For the same purpose that the Court gave  
21 the earlier instruction, Your Honor, to respond to the  
22 suggestion that Oracle cooked up the lawsuit.

23 **MS. ANDERSON:** Your Honor, this is an ongoing thing of  
24 trying to put in evidence that is clearly hearsay, not within  
25 any exception.

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1           So continuing limiting instructions is simply a way that  
2 Oracle is putting in evidence, documents, and information that  
3 are purely hearsay.

4           **MS. HURST:** Your Honor, this will be a governmental  
5 record sworn by the companies. It is not hearsay. But even if  
6 it were, it would be proper for the purpose the Court earlier  
7 described.

8           **THE COURT:** Well, I'll hear the answer before I make a  
9 ruling on it. Let's hear the answer. Maybe I'll strike it  
10 out. But we'll see.

11           Go ahead.

12           **BY MS. HURST**

13           **Q.** Okay. Ms. Catz, was there some kind of regulatory  
14 document describing Sun's position respecting Android?

15           **A.** Yes. We filed a document, with Sun's help, with the  
16 European Commission answering specific questions regarding  
17 Sun's view and dispute with Google Android.

18           **Q.** And is that document before you, Exhibit 5295?

19           **A.** Yes.

20           **Q.** All right. And if you look at page 39 of that document,  
21 of the exhibit, is that -- do you see there the information  
22 that you were referring to?

23           **A.** Yes. It's actually in paragraph 70. It says, "Please  
24 explain the conflict between Sun and Google with regard to  
25 Google's Android."

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1 And the answer is --

2 **MS. ANDERSON:** Objection, Your Honor. We object to  
3 reading into the record a hearsay document. The document  
4 hasn't been offered in evidence.

5 This is not a business record. It's an exceptional  
6 situation where Oracle wrote a document and submitted it to a  
7 governmental agency in a unique situation which would,  
8 therefore, be hearsay, Your Honor.

9 **MS. HURST:** Your Honor, it's a regulatory filing sworn  
10 by the companies.

11 **THE COURT:** That part doesn't matter. That doesn't  
12 change the hearsay nature of it. So that's -- that doesn't cut  
13 a figure.

14 But when was this in terms of the acquisition? And who  
15 filed it? Was it an Oracle document or a Sun document?

16 **BY MS. HURST**

17 **Q.** It's an Oracle document; is that right, Ms. Catz?

18 **A.** It's an Oracle document, but Sun answered the questions  
19 and gave us the answers to these questions.

20 **Q.** Sun supplied you with the answers for the Sun questions;  
21 is that right?

22 **A.** Yes. Only they could supply those to us. It was  
23 July 24th, 2009.

24 **THE COURT:** Look. That -- if Oracle is the one who  
25 filed it, it's not admissible. It's hearsay.

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1           **MS. HURST:** Your Honor, we produced all of the drafts  
2 leading up to this, showing Sun's participation in the  
3 drafting.

4           **THE COURT:** Show the document that came from Sun. And  
5 it was before the acquisition; is that what you're saying?

6           **MS. HURST:** Yes. It's in the July 2009 time period,  
7 Your Honor, exactly when Mr. Schmidt --

8           **THE COURT:** That document would be admissible, I  
9 think, for the same limitation. That would be a Sun document.

10          **MS. HURST:** All right. We're going to look for it,  
11 Your Honor. And we're going to have it here tomorrow morning  
12 when we come back.

13          **THE COURT:** All right. Thank you.

14          **BY MS. HURST**

15          **Q.** All right. So I'm going to move ahead, Ms. Catz. And  
16 we'll come back to that document tomorrow.

17          Ms. Catz, in your diligence and integration planning for  
18 the acquisition of Sun, did you ever see anything that was a  
19 license between Google and Sun, or other kind of permission  
20 between those companies?

21          **A.** No.

22          **Q.** And did Mr. Schwartz ever indicate to you, in words or  
23 substance, that Google's use of the Java platform in Android  
24 was okay with Sun?

25          **A.** No.

CATZ - DIRECT / HURST

1   **Q.** And when did Oracle's acquisition of Sun finalize?

2   **A.** January of 2010.

3   **Q.** As part of the due diligence, did you learn whether Sun  
4   owned any copyright registrations related to the Java platform?

5   **A.** Yes. Sun owned many.

6   **Q.** What happened to those after the acquisition?

7   **A.** Well, Sun Microsystems became -- in the merger, became  
8   Oracle America. And so Oracle America, which is a subsidiary  
9   of Oracle, owns them.

10   **Q.** All right. Would you look before you, Ms. Catz, and see  
11   if exhibits 464 and 475 are there.

12   **A.** Yes, they're both here.

13   **Q.** And do you recognize those as the copyright registrations  
14   for Java SE 1.4 and 5?

15   **A.** Yes, Java SE 1.4, Java 2, SE version 5.0.

16   **Q.** And you understand those are the works at issue in this  
17   lawsuit?

18   **A.** Yes.

19   **Q.** And Oracle America, which used to be Sun, is now the  
20   plaintiff in this lawsuit; is that right?

21   **A.** That is correct.

22                   **MS. HURST:** Move the admission of 464 and 475.

23                   **MS. ANDERSON:** No objection, Your Honor.

24                   **THE COURT:** Those two are received.

25                   (Trial Exhibits 464 and 475 received in evidence.)

**PROCEEDINGS**

1           **MS. HURST:** That's a good breaking point, Your Honor,  
2 if about it makes sense to stop four minutes early.

3           **THE COURT:** It will. I'm going to take advantage of  
4 the five minutes and read the one sentence that you all asked  
5 me to read about Dr. Bloch.

6           Is that okay?

7           **MR. VAN NEST:** That's fine, Your Honor.

8           **MS. HURST:** Yes.

9           **THE COURT:** All right. Okay. I need for you over  
10 there -- this will take one minute. But you remember  
11 Dr. Bloch? Maybe you remember him. I think he was the  
12 energetic witness.

13           (Laughter)

14           **THE COURT:** He gave some testimony. And now the  
15 lawyers have both agreed that a tiny piece of his testimony or  
16 a portion of his testimony should be disregarded. So that's  
17 what I'm going to tell you now. I'm going to read exactly what  
18 the lawyers want me to read.

19           The portion of Dr. Bloch's testimony regarding the  
20 indirect dependency of packages and classes in the Java  
21 Language specification has been stricken and should be  
22 disregarded.

23           I'll read it again.

24           The portion of Dr. Bloch's testimony regarding the  
25 indirect dependency of packages and classes in the Java

**PROCEEDINGS**

1 Language specification has been stricken and should be  
2 disregarded.

3 And I am pretty sure that by tomorrow we will have a  
4 stipulation that will supercede and deal with that subject.

5 So there we are. Correct? We're going to have that  
6 stipulation by tomorrow; right?

7 **MS. HURST:** We're going to have it, Your Honor.

8 **MR. VAN NEST:** Yes, Your Honor.

9 **THE COURT:** All right. So you don't need to worry  
10 about Dr. Bloch in that connection. So there we are.

11 Okay. We will now take our break five minutes early.  
12 We're on track. See you here tomorrow. Have a great evening.  
13 Remember the admonition.

14 (Jury out at 12:56 p.m.)

15 **THE COURT:** Be seated.

16 Ms. Catz, you can be back here at 7:30, please, in the  
17 morning.

18 **THE WITNESS:** Sure. Of course.

19 **THE COURT:** You have a good evening as well.

20 **MS. HURST:** Thank you, Your Honor.

21 **THE COURT:** Let's talk a minute about what's going to  
22 happen tomorrow.

23 On your Rule 50, you can -- let's have that. When can you  
24 do it in writing?

25 **MR. BICKS:** Your Honor, I think we definitely can get

**PROCEEDINGS**

1 it done no later than tomorrow night. And if the Court wants  
2 it earlier, I bet --

3           **THE COURT:** No, that's fine.

4           **MR. BICKS:** Okay.

5           **THE COURT:** That's fine. And it would be as if it  
6 were made at the close of the Google case.

7           **MR. BICKS:** Yes.

8           **THE COURT:** All right. That's fine.

9        Next, the Zeidman thing -- I'm happy to read this, but  
10 this is very urgent -- turbit, I guess is the word. Turbit.  
11 It's going to be hard for me to even read this and get it  
12 right.

13       But that's what you want me to do?

14           **MR. BICKS:** I think there's a demonstrative that kind  
15 of goes with it, that I think --

16           **THE COURT:** All right.

17           **MR. BICKS:** -- helps it out.

18           **THE COURT:** Are we going to have that ready for  
19 tomorrow?

20           **MR. BICKS:** Yes.

21           **THE COURT:** We'll do that tomorrow. You're going to  
22 get me the stipulation on the 62.

23       What else?

24           **MR. BICKS:** I don't think we have anything.

25           **THE COURT:** Who's our witness after this witness?

**PROCEEDINGS**

1           **MR. BICKS:** Mr. Screven.

2           **THE COURT:** Okay. I thought I -- all right. That's  
3 great.

4           **MR. BICKS:** Yeah.

5           **THE COURT:** Did the lawyers need me for anything now?

6           **MR. MULLEN:** Actually, Your Honor, I don't know --  
7 Reid Mullen for Google.

8           I don't know if we gave you the time allotment on the  
9 Terrence Barr designations. If we didn't, I apologize for  
10 that. It's 80/20. 80 for Google. 20 for Oracle.

11           **THE COURT:** All right. Thank you.

12           **MR. MULLEN:** Thank you.

13           **MR. VAN NEST:** Your Honor, there is one other thing.

14           On the issue we discussed first thing this morning, with  
15 respect to the procedural history, we have revised a proposal  
16 and provided it to Oracle. And we'll continue to work with  
17 them to try to give you something. This is on the procedural  
18 history of the case, and so on.

19           We just created a new -- based on your comments this  
20 morning about something, let's say, more vanilla, we have  
21 created one and sent it. And we'll continue working and  
22 hopefully come to an agreement. And, if not, we'll submit what  
23 we --

24           **THE COURT:** All right. Well, I've been working on  
25 a -- not a proposal. At some point, the fact you can't agree,

**PROCEEDINGS**

1 you two, then I just have to make a decision. And so I'm  
2 gliding, in my mind, toward a landing spot.

3 (Laughter)

4 **MR. VAN NEST:** Okay. Good. We'll try to help.

5 **THE COURT:** I'm not saying it may be one that you  
6 like. May be one the other side likes. I don't know. I hope  
7 it's fair to both sides. But I would prefer that you two give  
8 me an agreed-upon solution.

9 **MR. VAN NEST:** We're trying to do that.

10 **THE COURT:** I will not get anything out -- I'll wait  
11 and see what you have tomorrow morning.

12 **MR. VAN NEST:** Thank you.

13 **MR. BICKS:** Thank you.

14 **THE COURT:** What else do you have for me?

15 **MR. VAN NEST:** That's it on our side.

16 **MR. BICKS:** Got nothing further, Your Honor.

17 **THE COURT:** All right. Be thinking about how much  
18 time you need for closing argument.

19 Don't tell me yet, but I -- you need to be thinking about  
20 that so I can plan ahead. But maybe on -- today is Monday.  
21 Maybe on Wednesday I would need to know that.

22 **MR. BICKS:** Yeah.

23 **MR. VAN NEST:** We'll talk about that too, Your Honor.

24 **THE COURT:** Okay.

25 **MR. VAN NEST:** Thank you.

## **PROCEEDINGS**

**MR. BICKS:** Thank you.

**THE COURT:** Good night.

(At 1:00 p.m. the proceedings were adjourned until  
Tuesday, May 17, 2016.)

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CERTIFICATE OF REPORTERS

9                   We certify that the foregoing is a correct transcript  
10 from the record of proceedings in the above-entitled matter.

12 DATE: May 16, 2016

Katherine Sullivan

Katherine Powell Sullivan, CSR #5812, RMR, CRR  
U.S. Court Reporter

Pamela A. Batalo

Pamela A. Batalo, CSR No. 3593, RMR, FCRR  
U.S. Court Reporter